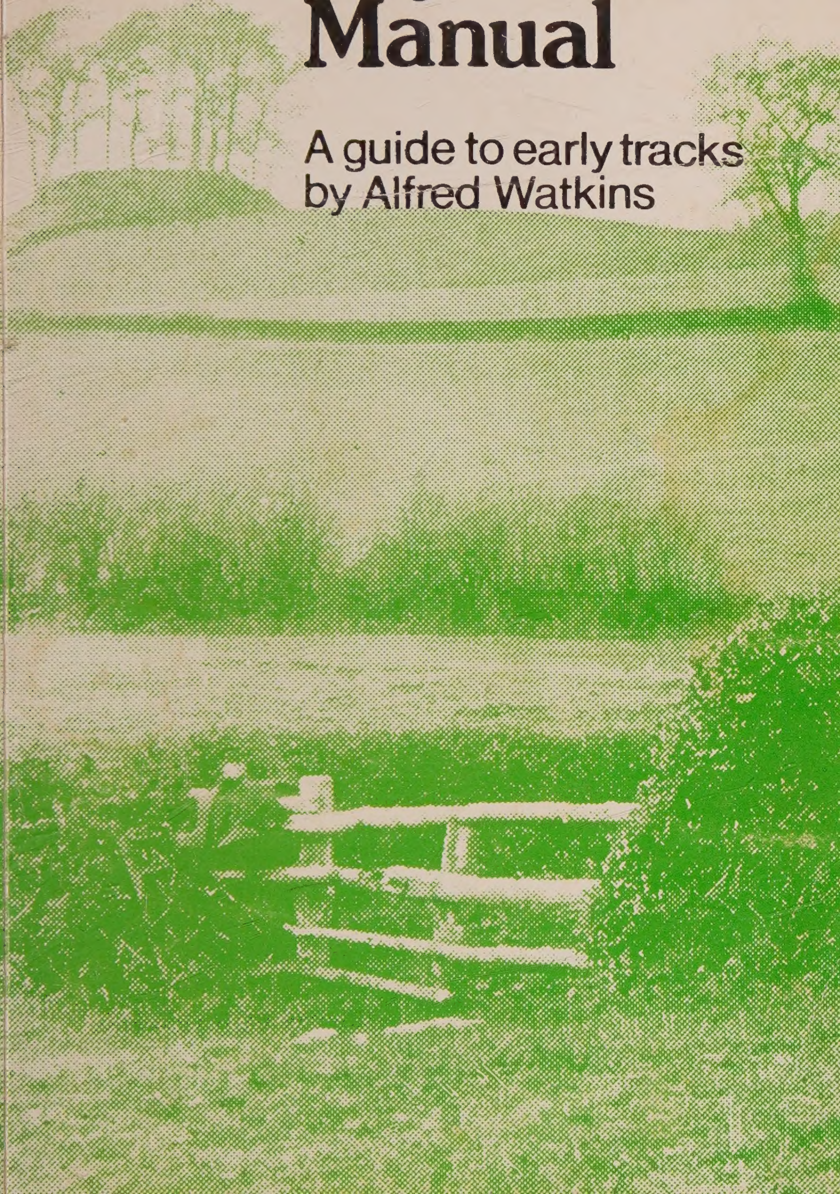
The Ley Hunter's Manual

A guide to early tracks
by Alfred Watkins



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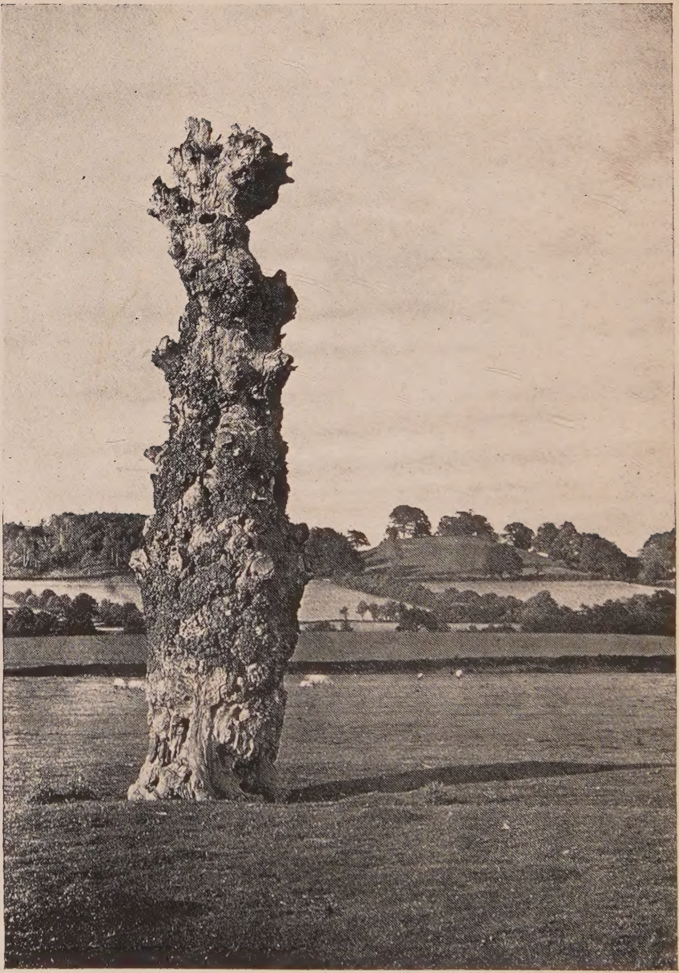

THE GREY VALLEY ELM, WITH COCKYARD TUMP.

THE
LEY HUNTER'S
MANUAL

A Guide to Early Tracks.

By ALFRED WATKINS

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PREFACE.

In the intervals of unloading earthenware, two navvies were engaged on an abstruse social problem over their beer.

" Look ye 'ere, Bill," at length said the one, after his mate had made vain endeavours for some time to get a word in edgeways, " I bain't a argying of yer, I'me a telling of yer."

There are two reasons why I need do no " argying of yer " in this book.

In the first place, I have done that in my larger one of two years ago, and, in the second, while experts have been contemptuously denying (and referring to the " best authorities " to prove it) that early man ever organised his tracks over sighting points, a considerable body of healthy out-of-door workers have been finding such tracks and alignments to be actual facts in their own districts.

So I just go on " a telling of yer " in this condensed manual, in the hope that it may send forth many more out-of-doors folk over meadow, mountain, and moor, not only to view the ley of the land, but to find these old tracks on it, and perchance to spend a healthy, exhilarating, and profitable holiday in that way.

To those who object that my facts and deductions are not only new, but not suspected by previous observers, I must point out that the subject had received total neglect until I did pioneer work.

I have tried often to find the words " track," " path," or " road," in the indices of scores of books on travel and archæology, but in only one instance have I had a doubtful success. It might be bad indexing in some cases, but real information on tracks was almost always absent.

My best thanks are due to friends (chiefly members of the Straight Track Club) who have sent the ley examples I quote in Chapter V.

I have expounded some new light thrown on the matter since I wrote last, especially as to camp, sun, and beacon alignment.

I found that I could not improve on some of my old illustrations, but have substituted new ones, whenever I could, and the ley examples are all fresh.

A. W.

September, 1927.

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LEY HUNTER'S MANUAL.

CHAPTER I.

HOW IT WAS DONE.

I will try to give an illustration how far back we have to go to get the beginnings of the old straight track, and how many changes have taken place in between.

Suppose an old man whom we have known dies, and we want to give a description of the very first clothes he ever wore. We remember him in his suit of rusty black, and the previous one, years before, of faded brown. But this does not help. We saw hanging on a peg in the house in which he died an earlier coat, of old-fashioned grey, and when they emptied the drawers, they found the very clothes and brocaded waistcoat in which he was married. But all these are worthless as evidence of his first suit of baby-clothes.

So with the Old Track. It is quite useless looking for existing fragments, however old, of roads which may remain from the first track, although, as we shall see, some bits may form useful indications of its site. The changes from early days have been so many in the matter of roads.

We must, therefore, clear our minds, not only of what we think we know of roads, even Roman ones, but of our surmises, and begin again.

Visualise then, early man in his hunting phase, probably in the Neolithic period of the Stone Age, just before metals were discovered. There were no villages or towns, and therefore no roads wanted between them, for man lived in hut hollows—if it were not in his cave-dwelling period. His wants were few, for he lived by hunting, and made most of his appliances at home.

But in most districts salt, useful for preserving his meat, was only to be had from a distance. And the same with his only cutting implements, flint flakes, unless he lived in a chalk district. He could not do without these for skinning animals, and many other purposes. They had to be fetched, and therefore tracks had to be made to the supply spots. The evidence that to do so he passed through peoples with whom he was at peace is fairly strong, for fighting times only came with later foreign invasions, when the hill-top camps, perhaps made for peaceful uses, were made harbours of refuge.

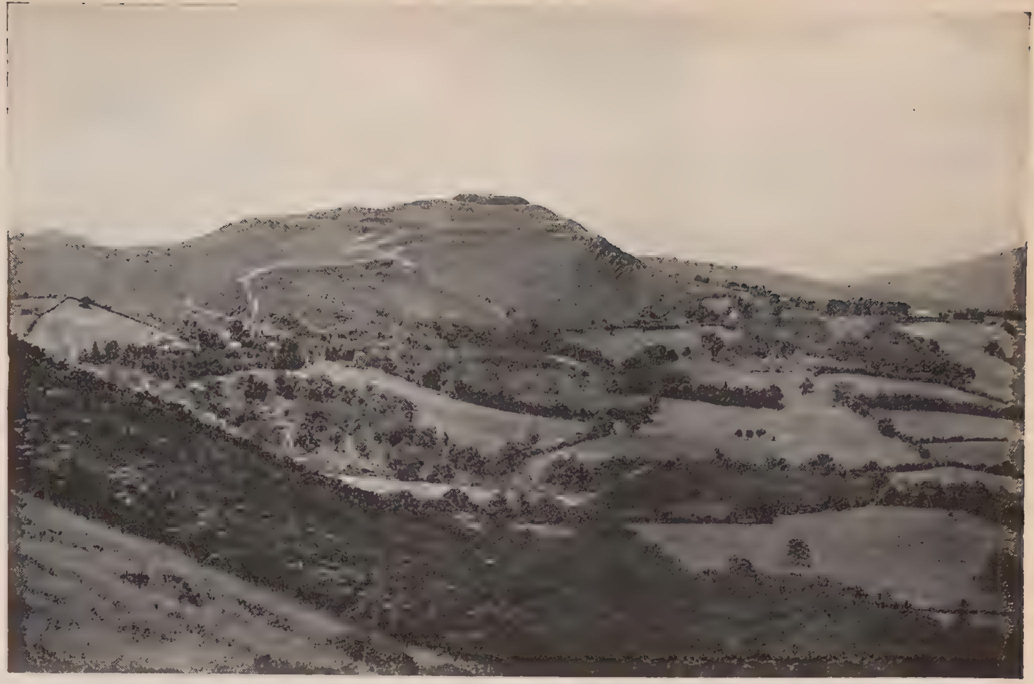
So he had to make a bee-line to reach these far-off spots. He went instinctively to the top of his highest hill, and from there sought out the farest mountain peak he could see in the direction he wanted to go. And hunter man, with his keen sight in the smoke-free air of that time could see a long way.

Keep in mind that there can never be more than these two initial natural sighting points, which in early days were always lofty hills, although one of them might have been in later times some revered spot as a holy well or a stone circle. All other sighting points in between had to be artificially placed by man.

And so our early pioneer, before he came down from his hill, noted on the first (and perhaps the second) ridge, some tree or natural mark, which aligned to his distant hill. And with a companion he went straight to that spot and there piled up a small cairn of stones, in such a position on the ridge, not often on the very top, that it could be seen from the valley below.

Down in this valley between, he would plant some other mark, perhaps a heap of stones again, but more probably a large stone of unusual shape brought with the aid of his tribe to the exact spot in alignment between his hill look-out spot and the first cairn on the ridge.

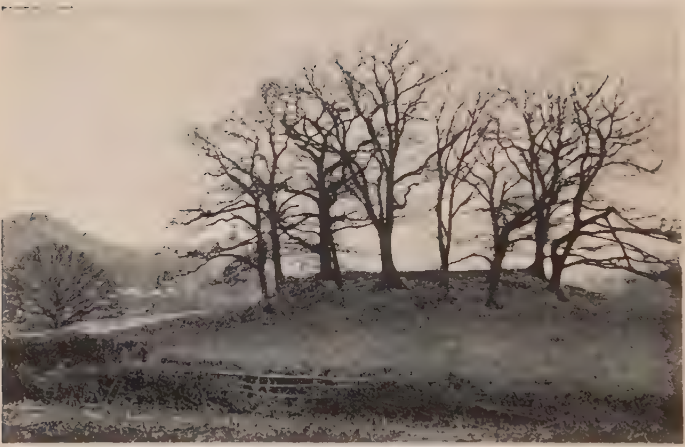
But how, it will be asked, could he decide the exact spot in alignment? There now came into use the first surveyor's instruments, a pair of tall staves, about man's height, which have been used all down the ages for this one purpose. One was planted in the ground as near as could be guessed between the first hill-point and the ridge cairn. The second was planted say a dozen yards away in exact alignment between the first and the hill-point. A sight was then taken over the two poles to the cairn, and if they aligned, both staves were on the straight track between them. But this seldom happened, and both



INITIAL POINT.

Fig. 7, Herefordshire Beacon, a British Camp.

PLATE II.



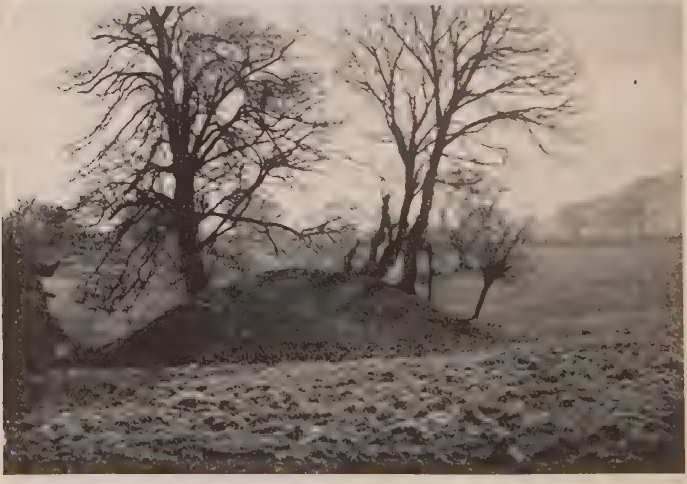


Fig. 8, Butt House Mound.   Fig. 9, Moccas " Castle " Mound.

poles had to be moved to a new position. And trials in this way were made until both would align both ways exactly between the two points in view.

On the next high ridge the spot in alignment would be found in the same way, by planting the first pole in alignment between the mark-point in the valley and the initial point, and the second in the same alignment. Then by sighting the other way toward the hill-point destination, the next spot for a mark-point on the next ridge or high ground would be marked down for a cairn.

In this way cairns would be made on every ridge between the distant points, and all in exact alignment. I think it probable that the ridges would be so marked first, and the mark-stones planted in position in the valley later on by the method I have described of dodging about with the two staves.

And here I might as well give a queer bit of word corroboration of this process, still surviving in our language. There is a word in the Welsh dictionary (and Celtic, from which the Welsh tongue was descended, was probably the tongue of these first ley-men), *dodi*, meaning *to lay, to place, to set, to plant*. And this is exactly what the first surveyor did with his staves. In our present English dictionary to *dodge* has exactly the same meaning, and we speak of an old man moving painfully his sticks or feet from one side to another as being a *doddering* old fellow. And two other dictionary meanings of *dod* is (in the North of England) a small rounded hill, usually on the shoulder of a larger one (just where a dod-man would want to set up a cairn) ; and also " a staff, a club."

Then in all parts are place names, as Dodford, Dodlee, Dodman's Point, etc., all on tracks.

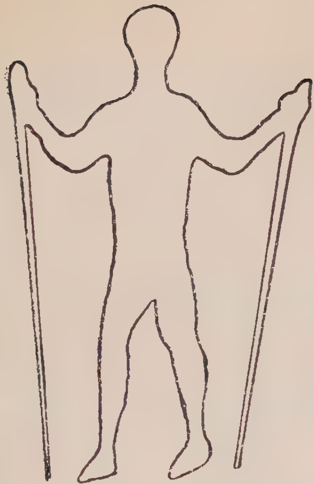
The early surveyor who used the staves was the Dodman. This is curiously confirmed by the old English name for the common-or-garden-snail, the Dodman, for he carries on his head when on the march the dodman's staves, as in Fig. 42.

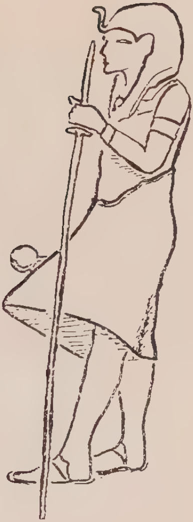
We should not expect to find a prehistoric picture of this first surveyor, but there he is, cut in the turf, 240 feet long, at Wilmington, in Sussex, the Long Man (*Fig.* 1), carrying the pair of staves as tall as himself. The surveyor is the only craftsman who requires two staves for his work, as all others can do with one. And this is confirmed by another prehistoric drawing (mentioned in "Chambers' Twentieth Century Dictionary") at Lake Onega in Russia, smaller, but with the two staves exactly as the Long Man carries them, except that the upper end of the Russian satves end in a circular knob.

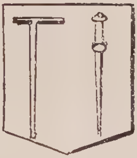
The Dodman's staff survived in the pilgrim's staff (*Fig.* 5), which had its knob at the top, and as an emblem of authority (for the track makers became men of power) in the wands of his successors, the Druids, bards, priests, and magicians of later days. Ushers and churchwardens still carry them on State occasions, and the folk beating the bounds, at rare intervals, carry long wands, with which they tap the mark-stones. And so do the Tuttimen of Hungerford in Berks, on the one day in the year they parade the town, and exercise their privilege of kissing the women they meet.

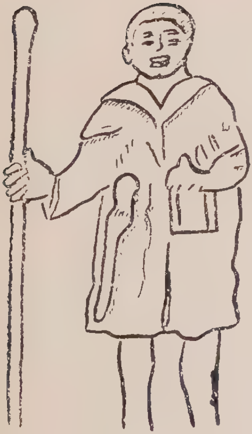
But to get back to the Dodman's early work. The mark-points at first were of the slightest. But some had to be seen from a distance, and with the possibility of help from a larger population, great mounds of earth, which we now call barrows or tumps, of a height to be seen over the banks, superseded the earlier cairns.

Now these mounds are usually (not always) found to be burial mounds, erected over a primary cairn, although subsequent burials were often planted in them. It is not possible to give "chapter and verse" for the way in which these two distinct purposes of sighting—mound and burial-place—came to be combined. But there is nothing improbable in the combination. To make a sighting-cairn on a ridge was an earliest instinct of primitive man, and so was to bury their dead in a cairn or mound. Even the higher apes are found to bury their dead under a heap of sticks, and the practice has come down the ages. There seems little doubt that not only did the mysterious skill of the early track-makers invest them with a certain









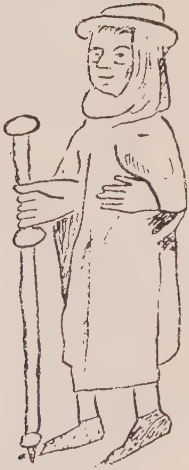


Fig. 1, Long Man. Fig. 2, Statue at tomb of Tut-ankh-amen.
Fig. 3, Pilgrim's Staves. Fig. 4, An Optio. Fig. 5, A Pilgrim.

amount of reverence and awe, but this was transferred to their mark-points. It became an honour, only accorded to chieftains, to be buried there. This was carried through long after, as we shall see, when the churches were not only planted on the mark-points (succeeding the heathen temples), but were also adopted as the burial places.

It was not always a mark stone, but sometimes a cairn which was placed in the valley. This, too, was enlarged as time went on. Now the natural way of making a mound is first of all to dig a circular trench, throwing the earth inwards, and as this provides some of the earth, it was left as a trench. It seems evident that these trenches naturally filled with water, and as the mound was made to be seen from a distance, the ring of water proved to be a valuable aid to sighting, and was made a feature of the valley mounds, as in *Fig*. 6. The identity of the Saxon words for mound (*beorh*), and bright (*beorht*), indicate this, as do also our words for a ring of light round the moon, *halo* and *burr*, being so allied to the Saxon words for a mound, *beorh* and *hlaew*. Larger and more important, too, grew the mark-stones.

Then it was evidently found that if a road over a bank or over the ridge of a mountain was cut deeply, it showed as a notch against the sky-line from the valley, as long as the observer was on the ley.

And now I come to the word by which the sighted track might be known. It must have had a name, and the original one was Celtic. Perhaps (for there are no records of pre-documentary matters) it was akin to our present Welsh *llan*, a prefix now indicating *church-place*, and earlier, *enclosure*, and having the same history in evolution as the Saxon word *ley*. This last is what I have adopted, and think from its history that it was really the name for a time, for it has grown to have a number of meanings all with a "straight line" connection. The criticism that it is a Saxon name for a prehistoric fact is weak, for we use Saxon names for other perhistoric facts, as barrows.

By the way, most of the earth in barrows has been found to have been carried from a distance, and an earth-carrying appliance used.

There comes curiously into our language from this source many place-names, as Mount Skippitt (skep is a basket or hive), Hod Hill, Kiverknoll, Kipperknowl, and both mound and earth-carrying appliance are called *barrow*.

I am treating place-names very briefly in this manual, but I must add that in at least one instance I have found *line* coming into a place-name as the name for the track. It is at Linton, Herefordshire, where an alignment lies on an old road called The Line, and through a Lynders Wood. Also that the sky-notch is known in place-names as *bwlch* (Welsh), *gap, crack, nick, scar.*

One bit of evidence I have found in the alignment of mounds is that when enlarging the original cairn or small mound (I do not know which), it was not done centrally in many cases. There was usually a causeway over the ditch, and at Eardisland, where the alignment goes to one side of the mound, the causeway or neck (on the line) is also on one side.

The ley frequently went through the centre of small ponds, an ancient confirming name for these being *flash*, for as we shall see, the fact was connected with the use of the Beacon for laying out the track.

Surprising as it may seem, not only did the road go straight through the pond, but this frequently had a stone causeway right through (*Fig.* 11), in one direction. Prehistoric men used horses, and it lingers as a custom to ride horses through the water.

Again, the alignments through ponds or lakes frequently also passed through small islands in their centre. This is linked up with the lake-dwelling period of our prehistoric history, usually found to be during the early Iron Age. It is an almost untouched field of investigation in England, which I cannot dwell on here. Such islands have an old English name, *Leye*.

Quite frequently, a track crossing a small stream will form a dam converting it into a flash or pond at the point, as Mr. O. G. S. Crawford has pointed out in regard to a "Roman" road.

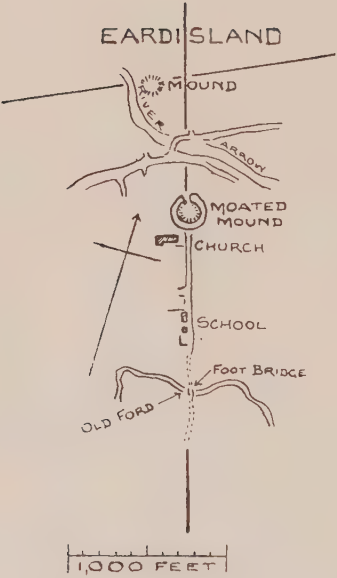


Fig. 6, Eardisland Mound and Track.

BEACONS.

A beacon light had its first origin as a guiding, not a warning light, and was undoubtedly used for marking out the tracks. All barrow excavators report on the universal finding therein of charcoal, and it was found on and under the stone surface of the Roman Chute Causeway in such a position that it could only have been used for a fire for laying out that straight road. Bael fires are recorded as being lighted at barrows, which always align on tracks, and place-names confirm these facts. Fire evidence is also found at mark-stones, and some of their names, as Fire-stone Cross, point to this. There is a Fire-barrow Lane and a Smokeham Farm.

Most of what we know of beacons we find in words and place-names. *Leve* is an obsolete word for *flame* or *fire*. *Beacon* and *beckon* are the same in Anglo-Saxon. *Shenley* places are on the *bright* ley, and *Shirley* on the *clear shining* ley. A *glade* through a clearing is from *glaed*, *bright*, and hence *Gladley*, which was *Gledelai* in Domesday.

The perplexing fact of ponds, moats and flashes being deliberately made on the sighted track, is I think explained by the fact that although a beacon light could be seen directly from every direction, it could only be seen reflected in a sheet of water by an observer standing (at the right elevation) exactly on the ley beyond the water. Water is a level plane, and thus formed an accurate reflecting instrument for laying out the ley, and afterwards checking it.

There is no need to labour the well known fact of the remains of beacon fires to be found on the highest hills. I have seen these traces on our Cole Hill, Coles Tump, and Midsummer Hill, and the fact is recorded in such names as the Herefordshire Beacon (*Fig.* 7), Dunkery Beacon, and scores of Beacon Hills.

References to the beacon light as a guiding light in the Bible are strangely clear, and are not weakened by being given as metaphor, for such can only be effective if it refers to facts known to hearers.

The narrow straight path as desirable, and the broad crooked one as the opposite, are clearly indicated. Then come references to "those who rebel against the light, they know not the ways thereof, nor abide in the paths thereof." And: "I will lead them in paths that they have not known; I will make darkness light before them, and crooked things straight." And so on in many passages.

Bunyan's "Pilgrim Progress" also in taking the straight narrow path as its framework, clearly describes at the beginning the "shining light" as a guide, leading through the pond into which the pilgrim stumbles, having missed the causeway, "good and substantial steps" placed there "by direction of the Lawgiver."

THE BEACON MAN.

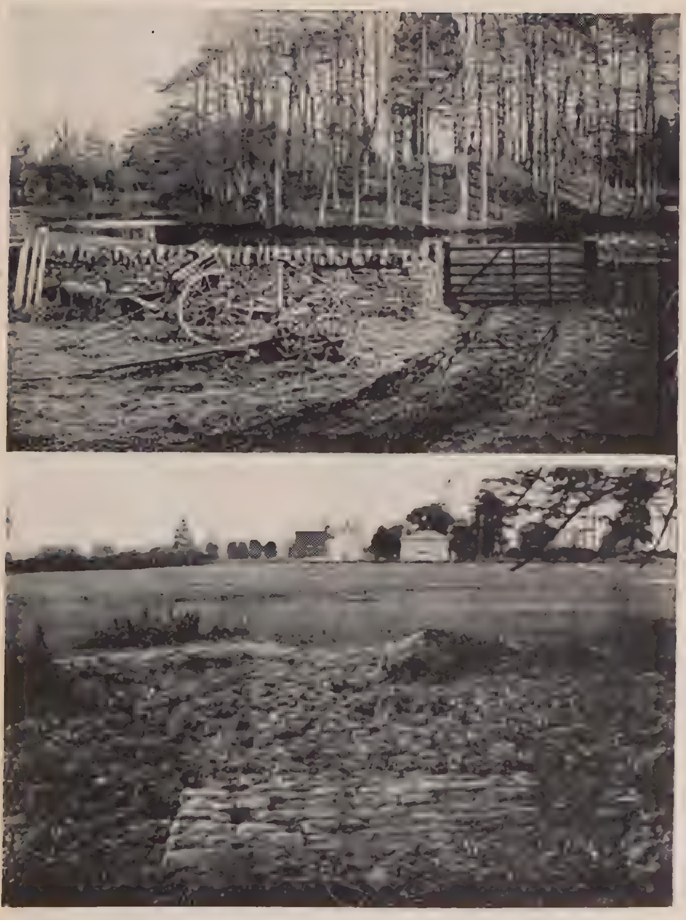
He must have had a name, or perhaps different ones at different times.

I have no doubt that the chief one was *Cole* or *Coleman*, associated with the Welsh *coel*, coming into words of magical import, and derived from *gole*, *light* or *splendour*, a Celtic word which by mutation became *cole*.

The track constantly goes to Cole Hills, and passes through innumerable Cole and Colemans Farms. The word crops up in such names as Colebrook, Colebury, Cole Church, Cole Cross, Cole Well, Colwick, and so on. Churches in Wales are dedicated to St. Colman, the name also being attached to two London churches, and to one of the oldest streets, Coleman Street.

Cold names are frequent, and the general attribution of a chilly meaning is unconvincing in the case of Cold Ash, Elm, Oak, and man. Some of these names are spelt *cole* in old records, and it is certain that the "d" is an intrusion. The much disputed Cold Harbour is such a case; it was the shelter of the Cole Man, and that it was a sighting point on his straight track, is clearly shown by the fact reported by Major Dunning in his *Roman Road to Portslade*, that four Cold Harbours align in one straight line.

PLATE III.



WATER SIGHTING POINTS.

Fig. 10, Eardisland Moat with Causeway on left. Fig. 11, Holmer Pond Causeway.

SPHINX

It is a surmise, but probably the Cole-man gave name to the product of his fires, *cole* or *coal*. Our proverb " As black as a coal " describes his grimy appearance after his work, and gives a suggestion for one other name for a beacon tender.

Black occurs in place-names in puzzling numbers, for places to which the usual meaning could not apply. We find Black-well, -grove, -borough, -pool, -stone, -ford, -moat, -acre, -ley, -way and -hill all over the kingdom. The sighting mounds (as the Black Mixen) frequently have the name, and there are four Blake Lows in Derbyshire.

The word is " of difficult history," as even in Anglo-Saxon times it did not mean dark, but *pale* and *shining*, and in Slav languages has a meaning of *blessed*, *light giving*. In tracks we have Blackley, Blakeway and Blakeley. In surnames, Blackman, Blakeman and Bleakman There was a Blakemanstone place in 1400, and two other Blackmanstone places. The black man was a fellow to the cole man.

I can only give passing reference to other possible ley-man names : Jack, Totman or Tutman (a mutation variety of Dod-man), Grim (more associated with ditches), Scot, and the later Weyman, there being a Weyman's Wood near Clifton on Teme.

The application of the beacon light for stabilising seasonal alignments is best left to another section.

CHAPTER II.

THE MARKS THAT ARE LEFT.

When I mentioned that there are practically no traces of the original straight tracks to be seen, it does not mean that there is no topographical evidence of the first track-makers' work to be found, and that we can only get information in words and place-names.

On the contrary, there fortunately remains to us a very large number of the physical marks and erections they left on the face of the earth, which enable the modern ley-hunter to follow up their tracks, and incidentally make this hand-book possible.

These are the mark-points or "pegs" which they made on the track. Such sighting points are all artificial, and were constructed in three materials, earth, stone, and water. In addition, trees were often planted at sight points. The site of all these was decided by the alignment, and to find a number of them enables the modern ley-hunter to reconstruct the old track.

MOUNDS.

These were usually of earth, but sometimes mainly of stones with earth mixed.

As before mentioned, they were often used as places of burial, a purpose which does not enter into the investigation of this manual.

In size, they were built just tall enough to be seen from a distance in the position they stood in. This accounts for the very lofty mounds, as Silbury, the largest in Europe, which stands about 130 feet high, and could not be seen over an adjacent bank if it had been lower. To make this height possible it had also to be of great diameter, 550 feet. Stackhouse, in an early book on barrows, remarks that they are never larger than is necessary for them to be seen from the adjacent station to which their sighting line is directed. And Mr. Cobbold, in his book on Church Stretton, describing the Longmynds tumuli, repeatedly refer to their not only being in a commanding position, dominating the country round, but specifically notes of one that it " stands higher than the tops of any forest trees that would be likely to occupy any ground in the vicinity."

One variety of mound is known as the Long Barrow, its plan not being circular, but pear-shaped. These align as the others on the old tracks.

Other mounds are chiefly either flat-top (*Fig.* 8), pudding-basin shape (*Fig.* 9), or cocoa-nut shape. The former predominate in my district. And others comprise a central mound with a ring earth-work surrounding it.

Mounds in the valleys have usually a ditch or moat surrounding them, the halo to be sighted from a distance. Crossing this ditch was always a causeway on one side only, placed on the line of the chief track, for two tracks often crossed at a mound.

So important was this ring of water considered in the later types, that the mound often dwindled to a foot or two in height, and the whole can almost be classified as a moat.

Mounds were often used for defensive residences, such as castles, mansions and such like, and occasionally a church will be found to be built on or in a mound.

There were other useful purposes to which mounds were put in later days, as they were on the track of everybody. Here were held the folk moots for local government, the law courts (for all early ones were in the open air), local gatherings for amusements, and some, near to the " laws " (as court hills were called in Scotland), were reserved for the very prompt un-American executions of those days.

At others, as Weyhill, great fairs and markets gathered. But the trading aspect I must treat elsewhere.

Along the mountain ridges the mounds were planted in very special positions for sighting, not on the highest point unless the ridge were a narrow one, but just a shade down the slope, to be seen from all parts of the valley below. There are about six so placed along the sky-line of Radnor Forest, from the Black Mixen to Stanlow Tump. All can be seen from any part of Radnor Bottom, but I noticed that on mounting the hill across the valley, several sunk out of sight on the slope of the mountain. All writers on such earthworks have noted these facts, yet all have missed the logical deduction.

On the ridge of the Malverns, near Pinnacle Hill, are two mounds. Standing on one, I noted two different roads on the Worcestershire Plain aiming directly at my feet, being built on ancient tracks sighted over the mound. This is their chief use, burials are a secondary purpose.

Their names are many. Barrow, Burf, Butt, Cairn, Cruck, Garn, How, Knapp, Mary, Moat, Moot, Mound, Mount, Toot, Tump, Tumulus, Twt.

I doubt if any were made after the Roman occupation.

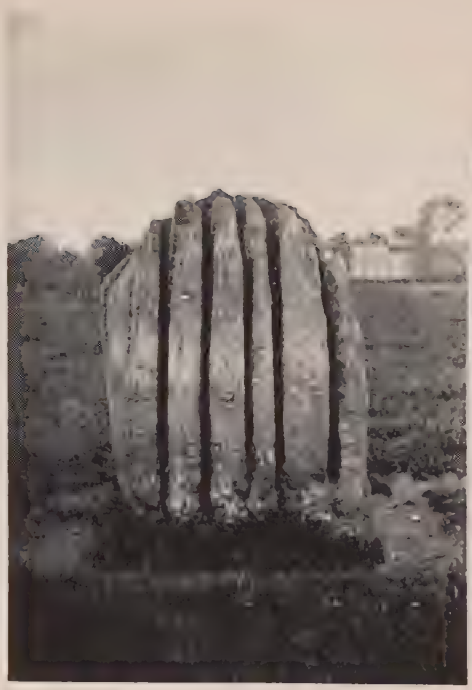
NOTCHES.

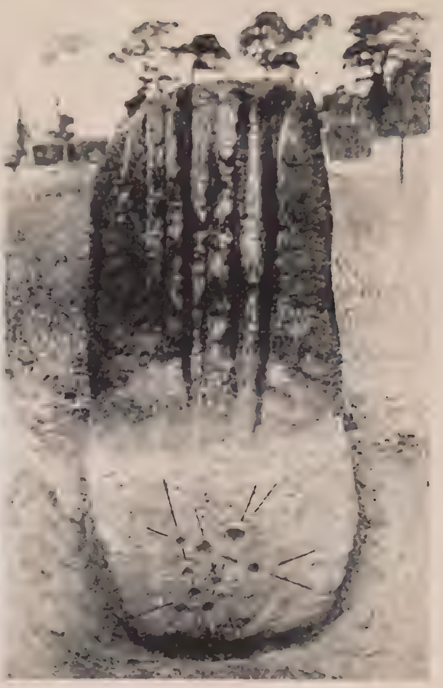
Cut a road deeply on a bank or the steep shoulder of a mountain, and standing in the valley in alignment, it forms an invaluable sighting point, as it is only to be seen when in alignment with the ley. I have already given the names for these. In the case of a steep narrow ridge at the top of a pass through which a road can be cut, the notch can be seen from both sides, and I have spotted the clean-cut notch of the Bwlch Effengel in the Black Mountains six miles away in the two opposite directions. But as a rule sighting-notches only show from one side, and the mark point on the other was often a mound or cairn.

Notches are demonstrated to be mark-points in *Figs.* 23, 45 and 63.

MARK-STONES.

The typical mark-stone is unworked, and has some appearance differing from chance stones in the district. Sometimes, not always, they are of non-local stone. The shape varies through pudding, cushion, and long shapes (*Figs.* 12 to 21), and the size from a foot high to the 22 feet of the Devil's Arrows. I have said unworked, but some of





MARK STONES.

Fig. 19. The Queen Stone. Fig. 20, Robin Hood's Stone, Allerton, with cup-hollows.

the later ones just begin to be worked or "pecked" a little into shape. One near Clyro is shaped with a round head, and Wergins Stone near Hereford (*Fig.* 16) has an upright shaft (much like a Christian Cross), let by mortice and tenon into the rough base. Some original "pagan" mark-stones have indeed been converted into Christian Crosses, either by having a shaft added to the rough stone base (as at Cwm-y-Yoy), or, as on Dartmoor, having a Cross cut on the shaft. It is doubtful whether most of the Churchyard Crosses were not built on the site of a pagan mark-stone. Some certainly were.

Probably they were placed at the crossing of tracks, and therefore when a new track was made a stone on the old one would be moved to the crossing point.

Folk-lore tales of these stones are peculiarly significant, for they usually tell of some giant or devil or person of power moving, carrying, or dropping the stone. And the top of a hill is often connected. It is folk memory of the mysterious ley-man who first placed it.

There was the giant who lived in a cave near Adam's Rocks, up on Backbury Camp, who wanted to destroy the spire of Hereford Cathedral; so he threw a big stone, but it dropped short, and fell in Longworth Meadow. Now on the map I found this rather small meadow to be exactly in alignment between the points. Like unto this are the several Giant's Throws; and the stone which Moll Walabee (who built Hay Castle in a night) got in her shoe, so in a fit of temper threw it across the river, where it dropped in Llowes Churchyard, and there it is, as a big Cross, apparently worked from an earlier menhir.

The Devil's Apronfuls of many parts are tales of that personage carrying earth in his flight through the air, and the apron strings breaking down, dropping the contents in some unwonted spot, and there it is to be seen as a cairn or mound to this day.

In such tales, often connected with stones, the devil obviously means the track maker, and therefore, like him, is "black," but "not so black as he is painted." His other name, Lucifer, or light-bearer, gives again that strange connection between black and light or fire, which still lingers when a mother tells her boy-scout son who has been at a sing-song over a camp fire that his face is "perfectly black."

The Long Stones vary from the height of a grave stone to the 22 feet of the Devil's Arrows at Boroughbridge.

Most amazing of all, are those (I know of five) like the Queen Stone (*Fig.* 19) near Symonds Yat on the Wye, which have deep vertical grooves running down them. Several writers (as Mr. O. G. S. Crawford, in "Antiquity") have stated these to be naturally formed by rain action. But a close examination shows this to be impossible, and that they must be artificially cut.

Those of the Queen Stone are from 5 to 7 inches deep and only 2 to 2½ inches wide, and suddenly ceasing near the base of the stone. They are also on all four sides of the stone, whereas if stratification were a contributing cause, as Mr. Crawford suggests, the grooves could only be on two sides. There are, I think, signs of fire corrosion at the top of the stone. The name in old Manor rolls is Quin Stone, and as I find *gwyn*, which is Welsh for *white*, is in the Cornish tongue corrupted to *quin*, the original name was the white stone, although its colour is red. Now White Stones are named in the Welsh Triads as of special importance for meetings, and the name attaches itself to the stones of a modern Druidic circle.

The legend of this one was that it was a sacrificial stone of the Druids. The deep grooves make to me some grim suggestions connected with Cæsar's report of the Druids burning their victims in wicker cages.

But this is all wild surmise. I only know that in excavation round the base, I found good neolithic flint flakes, showing that early man had passed that way, plenty of charcoal, moulds in the clay of unburnt sticks of wood, and one small fragment of calcined bone. In addition, pieces of heavy iron cinder, of iron ore, and of manufactured iron, showed that the stone was on the track to the iron furnaces just over the river. I at least proved it to be a mark-stone.

Another grooved stone, called Robin Hood's Stone, was recently moved at Allerton, Liverpool, from its former position, and Mr. E. R. Dixon investigated and photographed it, as in *Fig*. 20. It was formerly part of a circle called the Calder Stones, and occupied still another position. Sir J. Y. Simpson, in his 1867 book on Archaic Cup Hollows, describes these, and especially the cup-hollows, then (but not now) to be seen on them. It will be seen that there is a group of ten of these (underground) on this stone. I have shown by indicating lines that these form six alignments of three, whereas the "average accidental coincidence" number for ten points is one alignment of three.

These hollows must have been purposely cut in alignment for some reason. They have a strange resemblance to a ley map crossing at sighting points, and I think that they were really such a guide. In other examples there are small and large hollows, single and double ringed ones, which seem a near representation of stones, mounds, moats and camps, but the ringed hollow here might mark the one which is the present site, in this case a stone circle.

All link up into threes, which is the smallest number to indicate the direction of a ley. Distances are obviously not considered.

This stone is very similar to the Queen Stone, but not quite so high (7ft. 2in. by 3ft. 6in.), nor so deeply grooved. Another grooved stone is the Devil's Arrow at Boroughbridge.

Upright stones were sometimes arranged near together in a double row, especially on Dartmoor, and usually end in a mound or large stone. Major Tyler has shown these to be on leys. But the connection of these with tracks is obscure. The same can be said of Stone Circles, the sites of which are always on leys. But the circles appear to be a rather later development, perhaps in connection with the season-fixing alignments, and I shall not enlarge on the subject in this book.

Stones are often placed near to mounds, as if to indicate the direction of the track, and as mounds, in forty cases in Herefordshire, are adjoining churches, my surmise is that the church was built on the site of the stone, and the mound remains unchanged.

A mark-stone is unworked and apparently shapeless, yet its top surface by its edge or backbone often indicates the direction of its ley.

On two occasions I have walked round such a stone with no knowledge of the ley it was on, and by the direction and shape of the top, taken exactly by a compass, I found on plotting the angle on a 6-inch map that the ley was confirmed by other good mark-points.

Many stones have a bevelled top, which indicates the ley direction. The Leominster one on *Fig.* 14 does this.

Long Stones often have their tops cut in a chisel shape (as in *Fig* 21), and these also I think indicate the ley, although owing to the scarcity of such in my district I have not proved it.

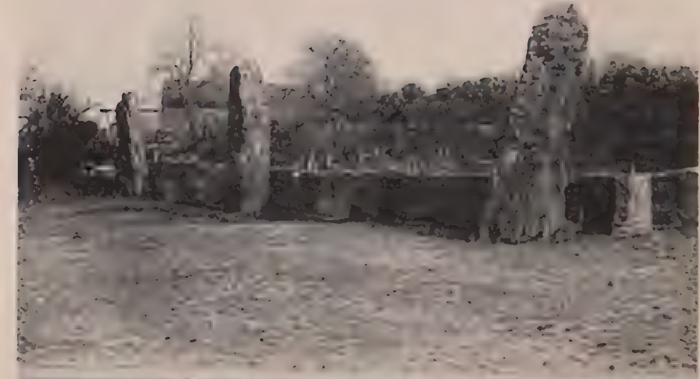
WATER-SIGHTING POINTS.

In my early days I remember farmers saying that when they cleaned out the pond in the summer they found it paved at the bottom.

At the beginning of my investigation, some instinct directed me to the corner of a meadow where was a horse pond, then dried up in summer drought. I saw stones peeping out from the mud, and sent for a spade and brush. So was uncovered the very orderly causeway shown in *Fig.* 11, out of the crevices of which I picked some fragments of old pottery of Anglo-Saxon date, a few bits of iron and iron ore, and other items showing it to be on a traveller's track. The alignment shown by the edges of the causeway and confirmed proved to be a well-marked ley across country.

The many islands through which the leys pass are of great interest and await investigation for pile-dwellings. Munroe, in his *Scotch and Irish Lake Dwelling* books, mentions the under-water causeways of stone, connecting these with the bank. There is a Loch of Leys and a Loch Lee in Scotland. Moats I have already touched upon as

PLATE VI.



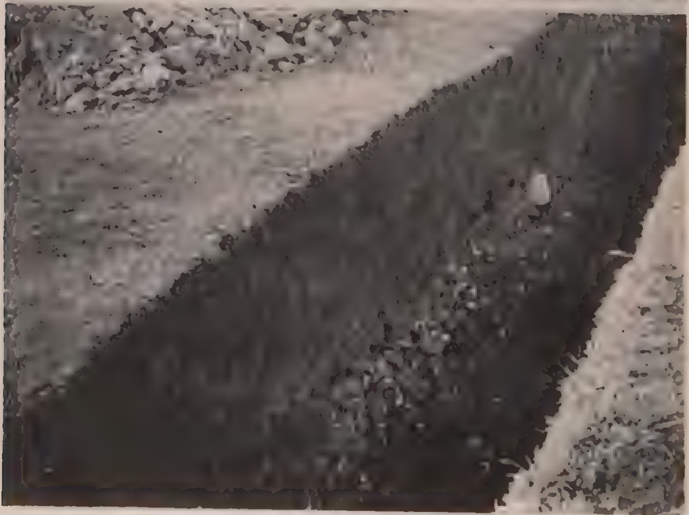
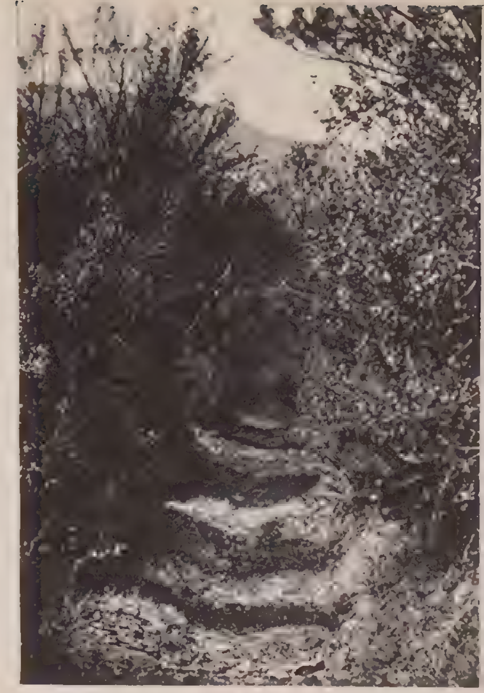
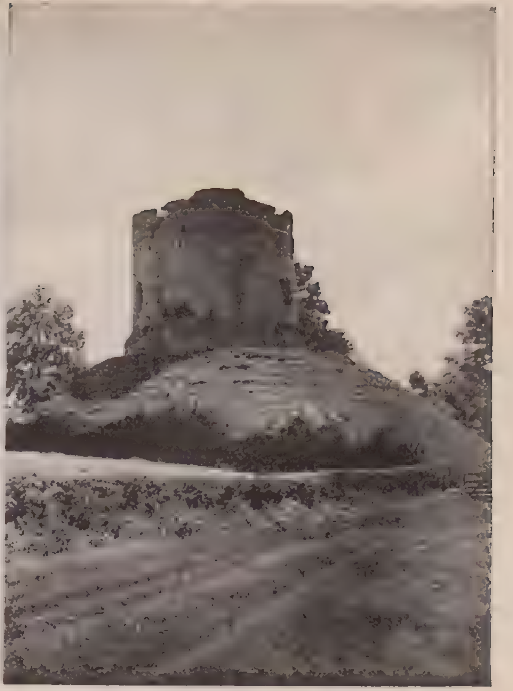


Fig 21. Harold's Stones Trelech. Fig. 22. Section of a Track.



LONGTOWN.

Fig. 23, Road to Ford and Notch.



LONGTOWN.

Fig. 24, Castle Mound.

water-sighting points. And the moats were made wider as this developed. The earlier moats (circular, I think) were all sighting points, but I have a strong suspicion that the custom of defending a dwelling with a belt of water continued long after sighted tracks went out of use, and that the late moats, especially if square, are apt to prove mare's nests from the ley-hunter's point of view.

INITIAL POINTS.

There is little to be said about these, although they are the very start of the whole matter. Usually they are the highest hill or mountain available in the district, but this height naturally varies according to the district. Sometimes such a point will stand independent, as the Wrekin in Shropshire, but more often will be one peak on a mountain range, with other neighbouring initial points, as the North Hill, Worcestershire Beacon, Pinnacle Hill, Herefordshire Beacon (*Fig.* 7), Midsummer Hill, and Chase End Hills on the Malvern range. In this part of England an initial mountain point is seldom less than 1,000 feet, but smaller heights would be the average in less hilly districts.

There can only be two initial points in an alignment, which must be made from one to the other, and all other points must be either artificial or accidental. I think that one of the initials must be a hill point, but the other need not be, and occasionally an important holy well, or a stone circle, will be made an initial. Whether the ley is started from the high or the low point I do not know.

It should not be taken for granted that the initials will be at the two ends of a ley, as with the sighting staves it is just as easy to continue a ley beyond one point, as between them, and it was often done.

The ley-hunter in a hilly district will very seldom be able to decide or locate both initial points. He is lucky if he can find one of them, as it is the most difficult task in his search.

Let me deal with an objection I have heard to lofty hills being sighting points, that it was very improbable that man would want to go on a path to the top of a hill. Well, just as in a "Point to Point" race or steeplechase, the horses do not finish at the top of a steeple, so man did not go to the top of a mountain which he used as a sighting point unless he wanted to.

TREES.

These are a very weak point with the ley-hunter. It is not but what trees were genuine and real sighting points in early days, but they do not last down the ages, and although place-names, as Cold Oak, The Folly, and The Grove, may reveal these points, and trees may still be there, it is never possible to point to them as proofs, for they cannot be the same trees, and may even be half a dozen generations later than the first ones.

Still such place-names do denote sighting points. In actual field work there is one tree which I have called *The Tree of the Ancient Track*, for I always find that its presence (and it is usually seen only in a single state, small clumps, or lines), indicates an ancient sighting point or a track. And over and over again it is to be seen on barrows, with no other of its species near.

This is our only native pine, the Scotch Fir, or Scots Pine, and nothing more picturesque is to be seen in our English landscape.

Trees, in their present number, are a great difficulty in ley-sighting, and it is difficult to come to any other conclusion than that leys were planned, in the first place, at a period in geological history when Britain was much more bare of trees than it is now.

Many a sighting point is made convincing by the clump of trees on it.

The Frontispiece shows the Grey Valley Elm, since fallen; its gigantic trunk, some 30 feet high, in the seventh age of decay as I viewed it there in late evening sunlight, sans leaf, sans bough, sans bark, sans sap, sans everything. Behind it is a huge sighting mound-like hill (the Cockyard Tump) on the neck between valleys, and a ley runs over tree and mound, which is still a foot-path across the valley, confirmed in other ways.

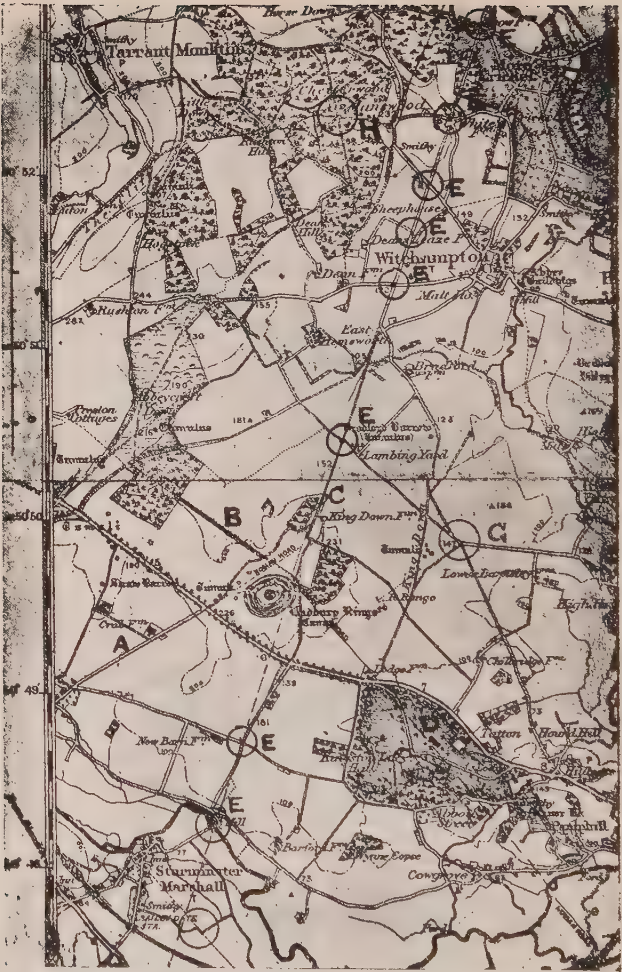


Fig. 27, Tracks to Badbury Camp (based upon the Ordnance Survey Map, with the sanction of the Controller of H.M. Stationery Office).

FORDS.

At these points the old track shows plainly, for it is usually cut deeply, so that the traveller not only gets a glimpse of the water as he approaches it, but, coming up, the hollow road makes a notch in the sky-line as a direction guide.

At Fawley, the wagons went down to the Wye in living memory, and there still remains the fragment of paved way into the water.

At Longtown (*Fig.* 23) you catch a glimpse of the solid stone causeway through the Monnow as you go down, and, lifting your eyes in alignment, see on the distant mountain ridge a clearly-cut notch in the Black Darren as a guide. Sometimes, as in two ford tracks to the Monnow near Pandy, the deep-trenched road is not wide enough for wheels, being made for foot and pack-horse only.

CAMPS.

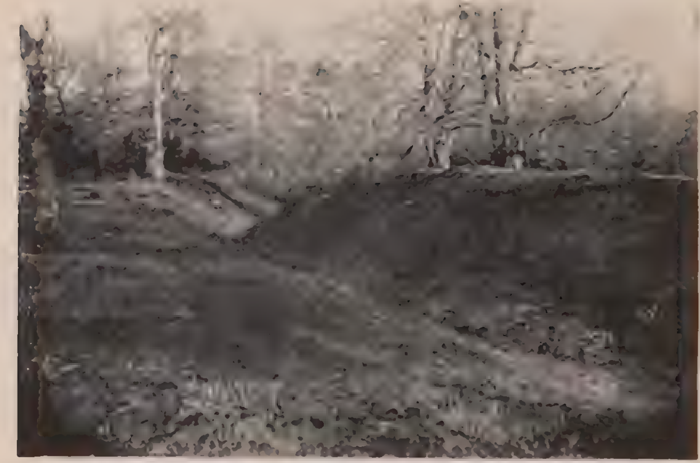
Camps were planted in the later days of the old track (for the few investigations have found them to be of Late Bronze or Iron Age), in the angles formed by the crossing of several tracks, usually on hill tops.

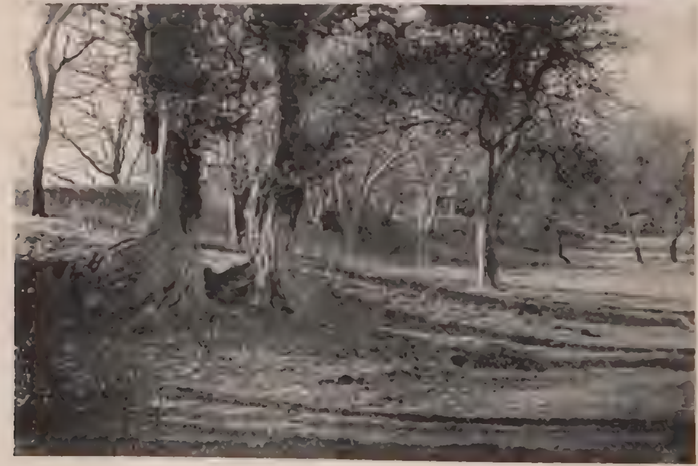
They are enclosures, surrounded by the only walls (of earth) used at the period, and the word, as in our Herefordshire two Wall Hill Camps, Sutton Walls, and Tankard Walls, really provides the most appropriate name.

Indeed it is best to dismiss the military defence ideas suggested by the word Camp, for there is no evidence that they were built for any other purpose than a peaceful enclosure for peoples or herds, however valuable they might prove for defensive occupation in later days of invasion. Certain it is that their position was decided by being at track junctions, combined with the hill-top position, and that the careful planning to command this or that valley or route, so dear to many writers, is chiefly imagination.

Many camps have, as can be seen in Badbury (*Fig.* 27), a double or even a triple vallum. And in a few cases, as the British Camp (*Fig.* 7), the defences come low down

PLATE VIII.





CAMPS.

Fig. 26, Castle Rings, Radnor, Curved Vallum. Fig. 25. Capler Straight Vallum.

the hill, and are obviously military in purpose. Probably in every such case these were additions to an original simple enclosure on the top.

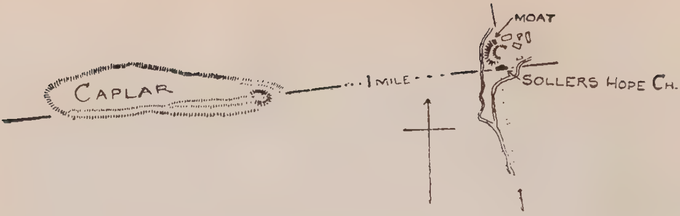
Leys, when plotted out, are constantly found to come to the edges of camps, and in some cases decide the vallum (as the earth wall is termed), although in most cases the contour of the hill decides a curved outline.

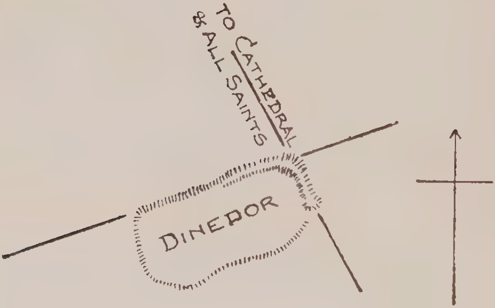
Throwing up the earth wall provided a defensive ditch, which was usually outside, but occasionally inside. In some cases, as at Sutton Walls, there is no vallum, but the steep side of the hill is cut in still steeper escarpment, providing a ditch at its foot, but leaving the top of the camp enclosure flat to its edge.

A feature of many camps, as Capler (*Fig.* 28), Sutton Walls, Dinedor (*Fig.* 29), and Credenhill, is a mound or mounds, at, and on, the corner of the vallum. I find evidence that these were there before the Camp was made, being in fact sighting mounds falling on leys. In the case of Capler, this priority was denied by one of the experts engaged (the one who made the formal report). But I carefully watched the excavation of adjoining portions of mound and vallum. The mound was composed of large stones down to its base and throughout. The vallum was built of small stones and earth, and it was quite impossible that they could have been constructed at the same time. But if the vallum had been the earlier, some of its structure of small stones would be found in the lower part of the mound, and such were entirely absent. The mound was proved to be the earlier.

Some of the mounds, as at Aconbury and Credenhill, were used to protect the entrance, which curved round it.

Not only do I find plotted tracks coming to the edges of camps, but in the map of Badbury Rings Camp (*Fig.* 27), not less than four present-day straight roads (therefore ancient) come right to the edge of its circular vallum. These are marked A, B, C, and D, the last verified by a fragment down below marked Roman Road. There are two other leys coming to the vallum, both exactly over three tumuli. I leave readers to discover these.





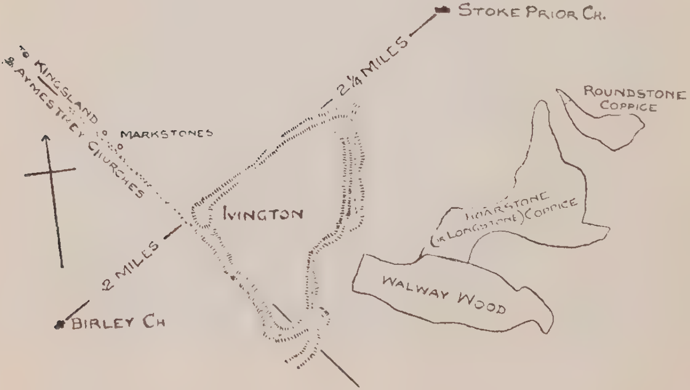


Fig. 28, Capler Camp. Fig. 29, Dinedor Camp.
Fig. 30, Ivington Camp.

Where part of the vallum is straight, it is almost sure to be decided by a ley, as in Capler (*Fig.* 28), Dinedor (*Fig.* 29), and Ivington (*Fig.* 30). These are confirmed by churches on the ley, two in some cases, and in that from Capler the church is oriented on the ley.

This principle continued when the Roman towns were built, and in these the straight walls are almost invariably decided by leys.

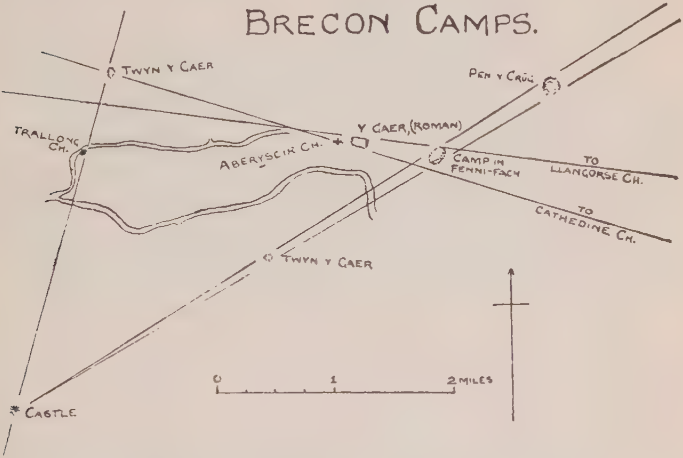


Fig. 31, Brecon Camp groups aligning.

Most unexpected of my discovered facts regarding camps is that they often align in groups of three or more, and that such alignments, slightly converging, not only touch the edges of the camps, but, at a distance, converge at a mound or church in at least three cases.

The first group illustrating this I found near Brecon, where, as in *Fig.* 31, the camps of Twyn-y-Gaer, Fenni Fach, and Pen-y-Crug align, and the leys meet at a large mound at Camlais.

Afterwards, I found a whole series of such groups on Salisbury Plain, as illustrated in *Fig.* 32.

In Shropshire, Caer-Din, Bury Ditches, Hopesay, and Norton Camps thus align, and the leys meet at a tumulus on Kerry Hill.

In Somerset, Brean Down, Banwell, Dinghurst, Dolebury and Durrington align.

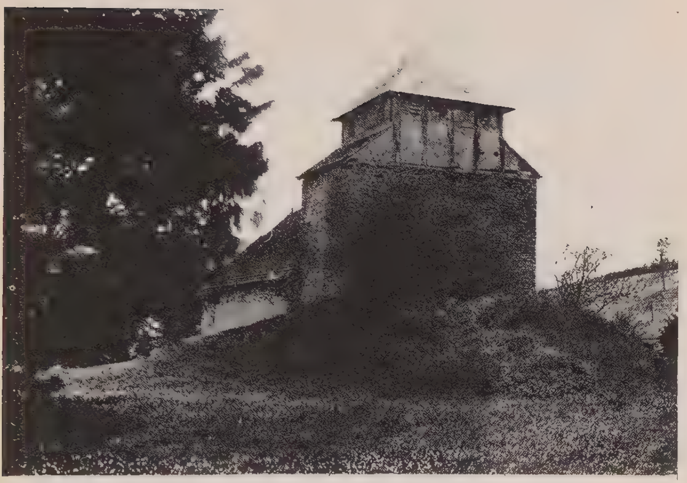
In Herefordshire, Brandon, Ivington, Sutton Walls, and Capler do the same, and in three of these, the leys pass through mounds at the corners of the camps. And there are other groups.

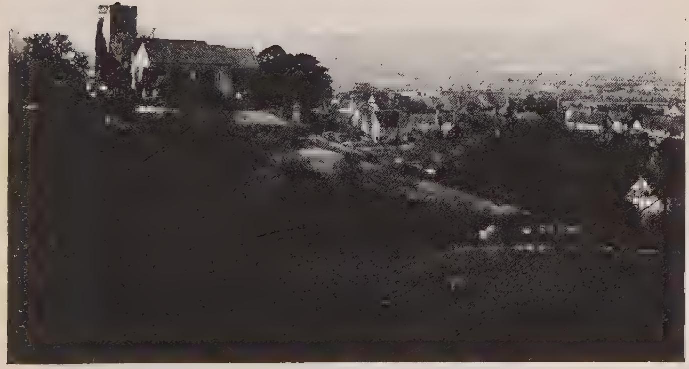
These camp-fixing alignments are surprising and perplexing. I cannot say why they were made, nor exactly how they were made. It is evident that two leys so close together, both cannot well be trackways, although there are signs that one was. The second must have been to define the camp edges. And, as will be mentioned in another place, especially regarding a certain traditional Welsh phrase for sunset, it is probable that seasonal fixing alignments came into the method.

CHURCHES.

We now come to a series of ancient sites which although perfectly genuine are not as originally designed, nor put to their original purpose. To be truthful and logical, I should include all very ancient homesteads in this series, because ley-alignment proves that they were built on the track. But there are two sufficient reasons why I must omit these. In the first place it is impracticable to say for certain which are ancient, and which only a few centuries old. In the second place they are so thick on the ground that if a thread is stretched straight across the map at hazard it will pass through several of them, and it is, therefore, impossible to prove their being originally aligned.

Churches are not under these difficulties. It is easy to judge with certainty whether one was really founded during the period (lasting well on into the Middle Ages), when all such were planted on mounds or mark-stones. And, secondly, there is only one to each parish, and they

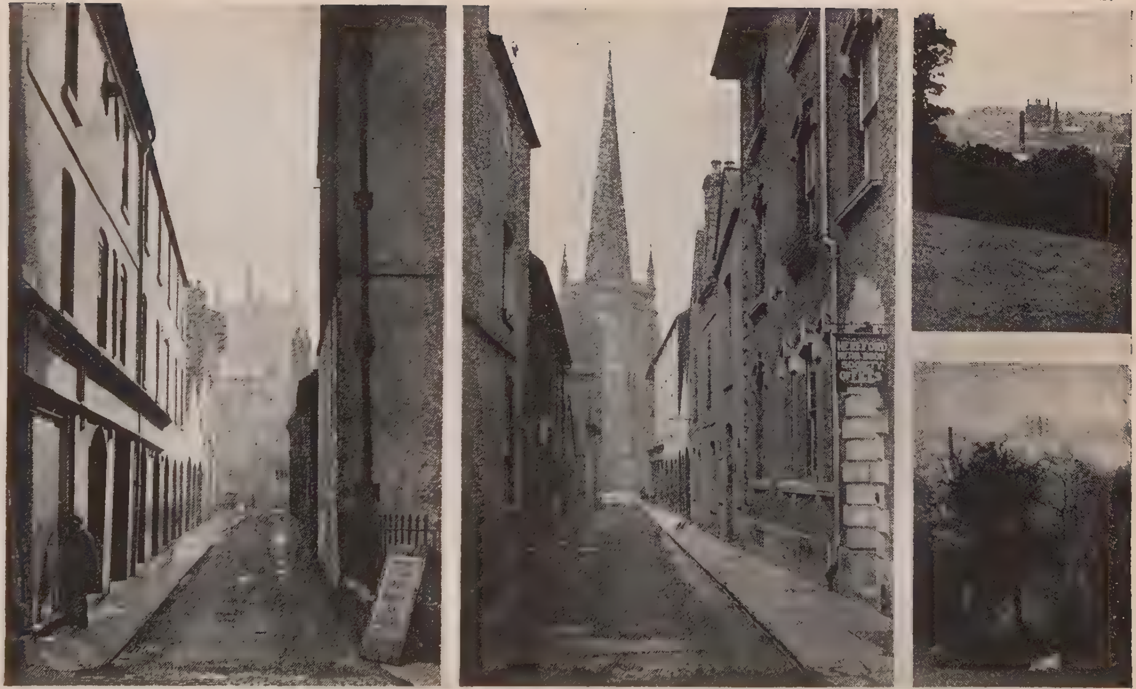




CHURCHES.

Fig. 33, Cascob, Tower on a tumulus. Fig. 34, Wigmore, on a high ridge.

PLATE X.



Offa Street Ley, Hereford.

Fig. 35, Sighted on Cathedral. Fig. 36, Sighted on St. Peter's. Fig. 37, Three Sighting points diagonal. Fig. 38, All in alignment.

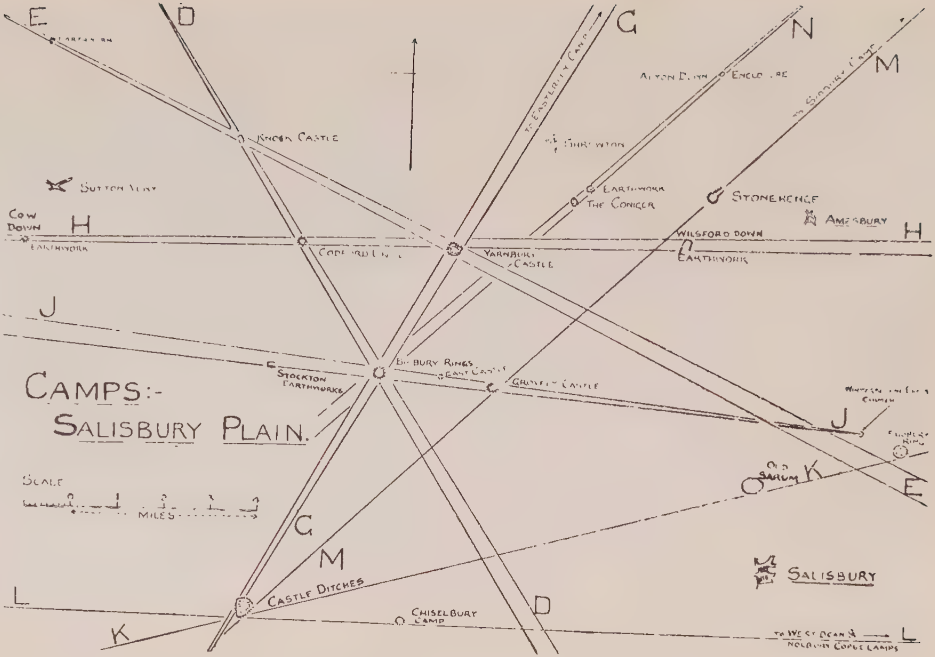


Fig. 32, Camp alignments on Salisbury Plain.

are not so thick on the ground but that an alignment of say four is proof of being purposely so placed.

There is satisfactory documentary evidence, in Bede and other authorities, that although at the earliest coming of Christianity pagan-sites were banned, there came a time in Augustine's work when this policy was reversed, and orders came from Rome to build the churches on the old " pagan " sites, that is the mark-stones or mounds of the ley-men. This seems to have been the policy with earlier religions, for the word " pagan " indicates " country " sites, and the Romans in their occupation of Britain not only adopted the old mark-sites for their altars but dedicated them to local out-of-door gods.

Thus at Michaelchurch (near Ross-on-Wye) there was dug up in the west-end of the church the only inscribed altar we have in the county, and it is dedicated thus: " To the god of the three ways Bellicus gave this altar." Near Glasgow was found one dedicated " To the spirit of the British Countryside." And another from the Wall of Antoninus, " To the gods of Britain, from whose fields our food comes."

The dispute as to whether the churches should be built on the pagan-sites comes down to us as folk-memory in the folk-tales of all localities, about attempts to build the church on the selected site being frustrated by the devil pulling down each night what was built, and carrying them to another site, which is named.

There are a few instances of the mark-stone which decided the site of a church being found embedded in its foundations when demolished, and it is probable that here is the origin of the custom of laying a " foundation stone " for a church, for in reality no single stone can be a complete foundation.

The instances of a church being actually built in or on a tumulus or sighting mound are very convincing. We have the towers of Cascob (see *Fig*. 33) and Bleddfa in Radnorshire so built. Mr. Hadrian Allcroft quotes many instances, and so does Shore in his *History of Hampshire.*

Then in most towns and villages the vista of a church standing in alignment at the end of a street (remaining from an old track) is very evident. A double example is that of Offa Street, Hereford, where St. Peter's Church aligns exactly to one end and the Cathedral to the other; and when on a bank overlooking the city these two churches are brought into alignment, there also lines up in the distance a wooded and mounded hill of circular enclosure, and in the foreground a small sighting-pond also aligns. (See *Figs*. 35 to 38.)

But the strongest proof that churches were built on the old tracks, is in the fact that in the map of almost every county, four, five, or even six churches can be found to fall into a straight line.

At Hereford: Aconbury, All Saints', Holmer, Pipe and Lyde, and Wellington churches thus align; and only last week, when in Wellington churchyard, I noted an ancient hollow road coming straight for it on the above line and confirmed by its continuance as a footpath for nearly a mile. Near Winchester, Major Tyler found two leys, each of six churches crossing at a site near the river, which he found to be that of the ancient church of Itchen Stoke. These are:—(*a*) Hursley, St. Cross, Itchen Stoke old site, Old Alresford, Medstead, Holybourne; (*b*) Kingsworthy, Easton, Avington, Itchen Stoke old site, Bishop's Sutton, Ropley. The ley sometimes passes through the tower and sometimes the chancel of the church, while occasionally the churchyard cross was on the original site.

In one case, at Paignton, a well-confirmed ley passed, to my surprise, through a corner of the large churchyard, and, on visiting the site, I found that the undercroft of the original Norman Church was exactly in that corner. The church had been rebuilt on a different site.

At Leominster, also, the ley passed a little to the east of the large church through the spot where excavations had revealed the foundations of a Saxon Apse.

It is not only in the *Deserted Village* that "The decent church that topped the neighbouring hill" is to be found, for a church perched up on an adjacent but inconvenient hill is a familiar object (*Fig.* 34), the reason being that sighting points on tracks are frequently on ridges and high ground, and the church was built on one. The "high places" so frequently mentioned in the Bible for altars and temples are thus explained.

There lingers in our modern word "steeplechase" the suggestion that they were mark-points on tracks, and the fact that in many other church towers have been found iron cages to hold the beacon-fires for marking the way is still stronger proof.

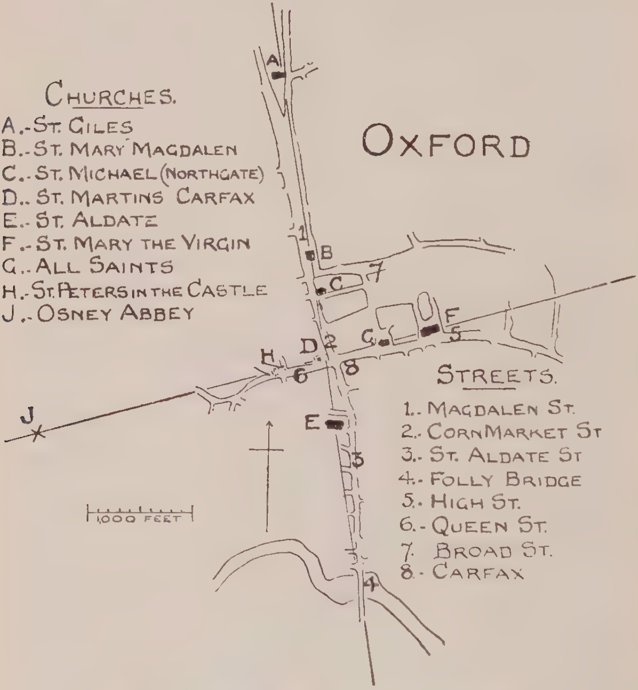
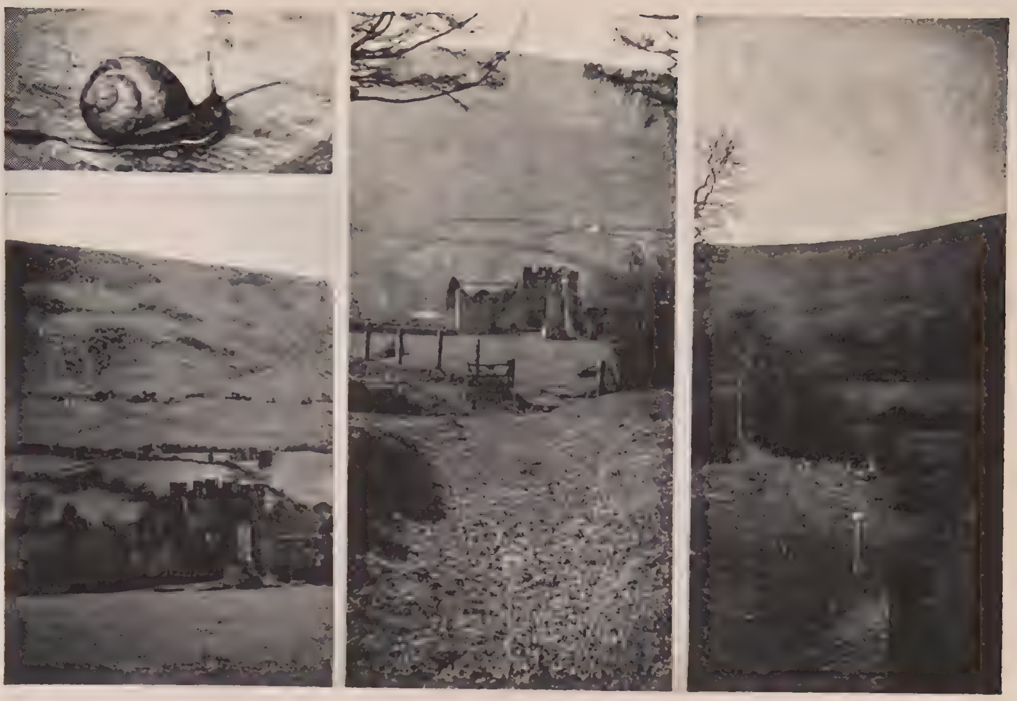


Fig. 39, Oxford City Church alignments.

In Oxford (*Fig.* 39) an alignment of four churches crosses another of five at the Carfax, the central point of

PLATE XI.



LLANTHONY.

Fig. 42, Dodman Snail. Fig. 43, Steep tracks on the ley. Fig. 44, Ley sighted over staves to the Abbey. Fig. 45, Staves sighted to mountain notch.

the city ; and at Bristol (*Fig.* 40) also there are two alignments of three and four churches crossing in a city gate, over which is the church of St. John. The strange feature of a church having a public way under (as in the above case), or through it, was the subject of a recent query in "Notes and Queries," which brought out at least a dozen instances. Of course, in most cases where a church was built on the old track, the latter was diverted, and these are exceptions.

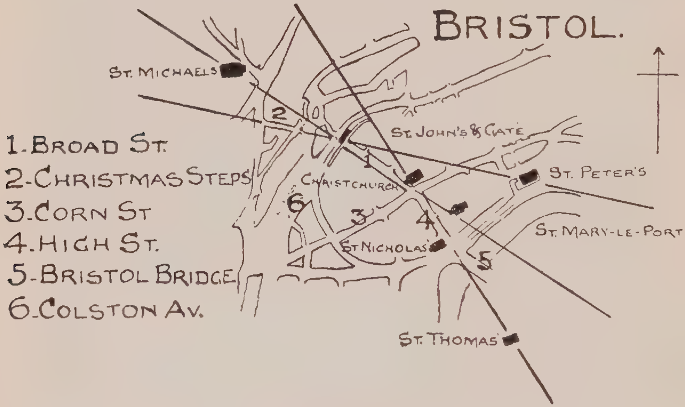


Fig 40, Bristol City Church alignments.

There is very little record of the sites of the heathen temples which preceded churches, and which it might be assumed would also be on the site of the old mark-points. But in one of the few instances where they are known—at Silchester—it is gratifying to find, as will be seen by *Fig.* 41, that the four temples and the early Christian church are all in alignment on three leys, which also include all the mark-points on that 6-inch map, namely, two parish churches, a moat, a mark-stone, and an amphitheatre.

The Hereford Church ley of *Fig.* 49 starts with an alignment of All Saints' Church with Portland Street,

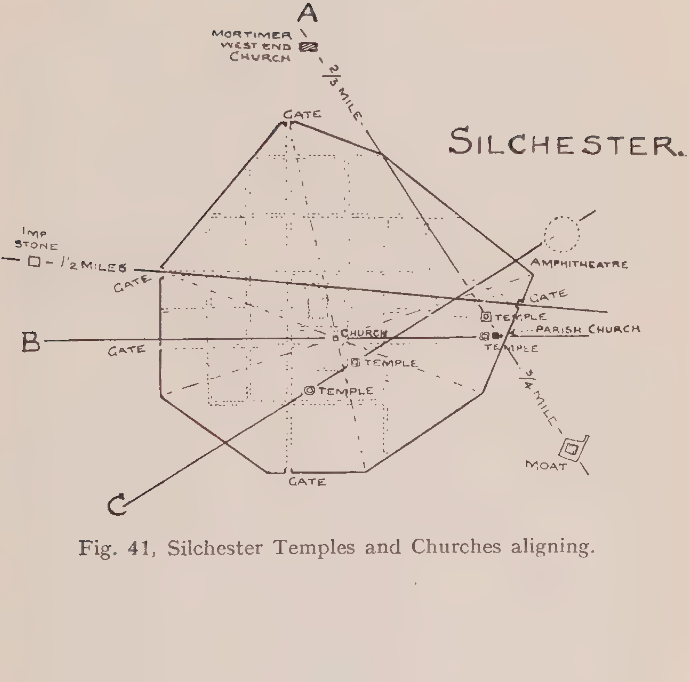


Fig. 41, Silchester Temples and Churches aligning.

then across the city it runs, through the site of old St. Owen's; then on St. Owen's Street it passes through an ancient chapel (St. Giles), so awkwardly placed precisely in the middle of a road junction that it has just been pulled down, and on to a house on a mound with the ancient name of Crosen, or crossing, for I found another well-proved ley through it, and it is traditionally on "a Saxon burial ground."

CASTLES.

The word "*castle*," says the N.E.D., came into our language at two different periods, the first long before 1000 A.D., and originally denoted an earthwork. At some Castle Farms such is to be found, but at others called Castle Farm, The Castle, Ragged Castle, etc., no castle or earthwork can be traced. I am inclined to think that in such cases the place was on the track to some earthwork, on the same principle as the *hill* place-names which I shall cite.

The true castles, usually dating from Norman times, almost invariably possess a keep on a lofty mound (see *Fig.* 24), with an earthwork enclosure attached. This arrangement is officially known amongst authorities as a "Norman motte and bailey," and herein, as regards the mound, I know by my ley investigations that they are most woefully in error. Nor does proof depend upon my work, for in many local records (which they close their eyes to), it is recorded (as at Worcester, Duffield, Penwortham, Arkholme, and Warrington) that articles of a date much earlier than Norman times have been found in the mounds.

It is certain that the Normans built their keeps on pre-existing and pre-historic sighting mounds, which they found ready at hand, although there is evidence that in some cases they may have enlarged them.

As a consequence, an ancient castle with a mound may be taken to mean an ancient sighting point on a ley.

The Castle Farm at Madley I found to be on a mound, and identified it with Cublington Castle. From its front-door a causeway sighted over the filled-up moat to the edge of Aconbury Camp, and on the map the ley passed through three churches, the site of another castle, and Cobhall Court, named, like the castle, from being on the cobbled way.

TWO LEYS.

I find it possible to show by photographs how "the marks that remain" align, and I do it here because one is a castle ley.

Standing on the great mound of New Radnor Castle, I noticed half a century ago that one saw the distant Old Radnor Church down a tree avenue in alignment. *Fig.* 57, taken from high ground beyond, in evening light (and incidentally showing well the enclosure of the castle bailey), shows four points in alignment, an ash tree, successor of older ones on the ley, the mound, an avenue of ash trees, and Old Radnor Church. In between, out of sight, but on the ley, are Harpton Court and a broad drive through the Broad Leasows Wood, and it goes on to a cross-roads, Woonton Ash (the same tree for the third time), Weobley Castle, and Canon Pyon Church.

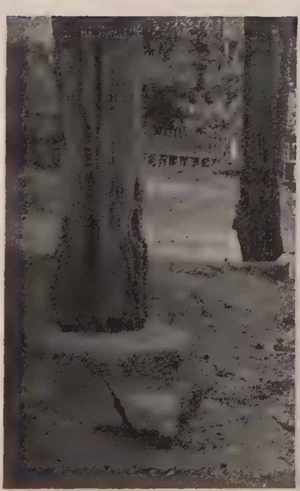
The second ley (*Figs.* 44 and 45) illustrates the use of staves. A bit of hollow track from a gate aligned to a notch on the ridge, and I planted two sticks (marked by an envelope) in alignment. Then turning round, I photographed over the staves, and, as will be seen, the chancel of Llanthony Abbey is on the ley, which on the steep mountain side also lies on three fragments of climbing tracks. *Fig.* 43, on its left, shows these independently, as they are only visible in evening light.

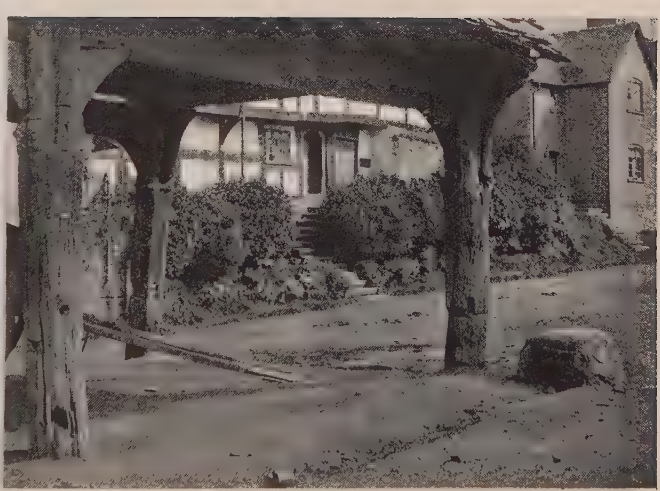
The dodman snail here depicted is not out of place, for it was here his word meaning dawned on my mind.

CROSSES.

I have found several churchyard crosses, as at Capel-y-ffin, Hentland, and Vowchurch (*Fig.* 17), to have the shaft set in an unworked stone, and also that the cross was on a ley. In many cases I have found on the 6-inch map that a ley passes through both the churchyard cross

PLATE XII.

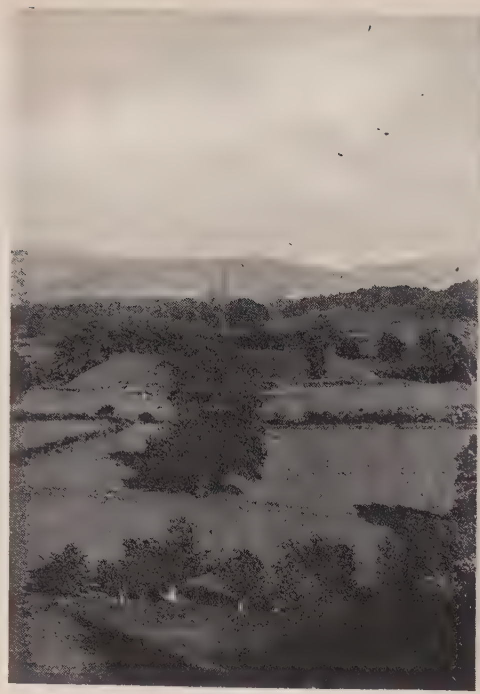


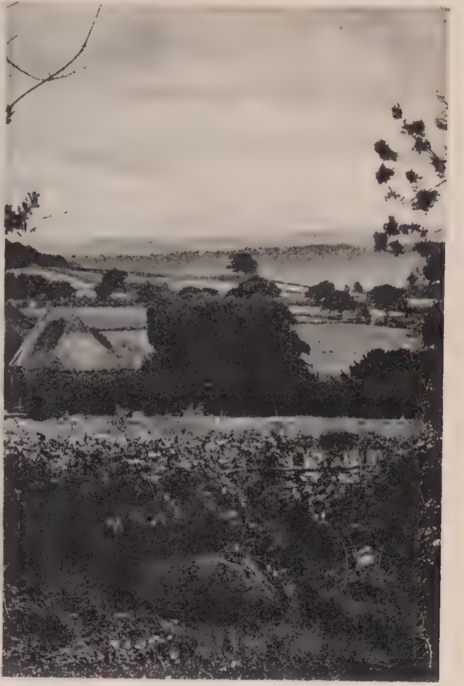


PEMBRIDGE MARKET.

Fig. 50, Socket Stone of previous Market Cross. Fig. 51, The Market Shed and Mark Stone.

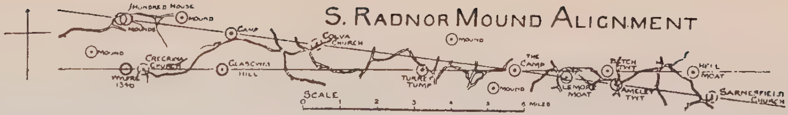
PLATE XIII.

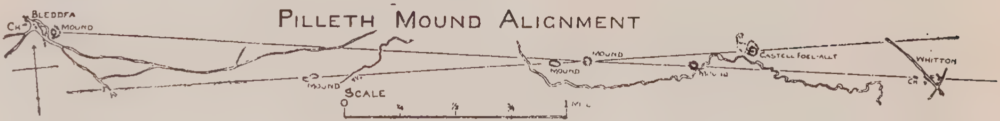


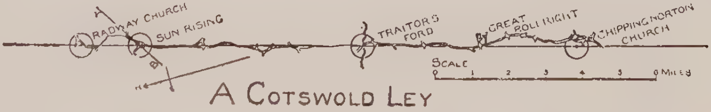


Two Alignments.

Fig. 57, New Radnor Castle to Old Radnor Church. Fig. 58, Yazor to Pen-y-Gader







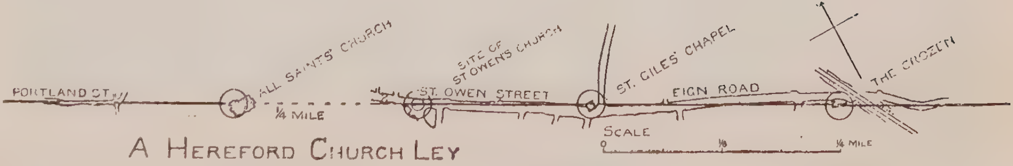


Fig. 46, South Radnor Mound alignment.
Fig. 47, Pilleth Mound alignment.
Fig. 48, A Cotswold ley.
Fig. 49, Hereford Church alignment.

and the church. As regards wayside crosses, there are instances where the original mark-stone, or part of it, lies near the cross, and others where very early names indicate the antiquity of the site.

When the churchyard cross at Bosbury was moved to a new site in 1798, the movers were so surprised to find a very large stone embedded in its base, unworked and unlike the flat stones with which it was built, that they recorded the fact, and laid the stone under the tower.

I find both types of crosses, if really ancient, to align on leys, and think them safe to take as sighting points.

CROSS-ROADS.

The way in which leys come through the cross-roads and road junctions on the map is very striking, even when the line does not lie on the present roads. The reason for this is that there was usually a mark-stone at such point, which preserved it as such down the ages. (See *Fig.* 27.)

But there are so many modern crossings and junctions that all are under suspicion. It is, I think, safe to consider a cross-road or junction with an ancient place-name to be a sighting point, and where a ley does come through one without a name to treat it as confirmation.

Cross-roads have always been treated with reverence, suicides were buried there as the next best place to the churchyard. The custom of setting a coffin down at a cross-road on its way to the church, and saying a prayer, has persisted in Herefordshire. The type of ancient names (taken from our county) are as follows:—Iron Cross, White Cross, Barons' Cross, Catley Cross, Croase, Crow's Ash, Cross-in-Hand, Crosen, Golden Cross, Lawton's Cross, Legion's Cross, Ridgeway Cross.

TRACKS IN SIGHT.

It is in uncultivated land, that is, amongst mountain and moorland, that the ancient straight tracks are still to be seen.

I see many of them on the slopes of the Black Mountains, shooting diagonally up the sides of the steep ridges. A few of them are deeply cut, probably from bringing peat down in sledges, for one such (*Fig.* 43) goes past a farm called in Welsh " The Foot of the Peat Track." This " wear and tear " is fairly modern, for such a hollow road often changes its straight course into a curved one to get to a farm which has evolved.

Not so often can a track be seen as a very slight hollow in meadow or orchard which has not been ploughed, and winter is the season to detect these.

The ghosts of tracks sometimes betray them. An observer tells me that he only sees one in the Lugg meadows when the dandelions are in bloom, and others, especially the stony Roman tracks, can only be detected when the corn is almost ripe, by the poorer and darker crop along their line.

The most convincing instance of a ghost track was at Sutton Walls. From there I noted the towers of Wellington and Marden Churches align to the edge of a vallum, marked it on the map, found that it went through another church and convincing points, and forgot about it for a year.

Then there came to me on a Wednesday's market the old farmer near. " Look here, gov'nor, as I drove in I saw one of your old roads going up to Sutton Walls. They were ploughing up the bank." So I was out there next morning, and he pointed out the dark mark he had seen, but not all of it, for most by this time had been harrowed over. But it plainly went to the notch from which I had sighted over the churches, and he had clearly noted that it came down to an oak in the hedge. So we were able to sight it up with staves. Sure enough, it was on the exact line I had marked on the map a year before.

Other ghost tracks may be seen in meadow sward in excessively dry summers, when all stone foundations and stony tracks show up.

UNDERGROUND TRACKS.

In the ages gone since the tracks were used, they are often covered by aluvial soil. I found several in the digging of a deep sewer near Hereford. I have detailed in my larger book how I walked straight to one, and saw its section, 2 feet deep, when I went across the Bishop's Meadow to show a companion the line of a track I had surmised. And there, within three yards of the spot it should have crossed, it was.

Later, I plotted out another track up the river side, sighted on Pen-y-Beacon, the end of the Black Mountains, and passing through a mark-stone in Wye Street. Surmising that the sewer might cut it, I asked a friend, and also the Surveyor, to look out. And there its section was found in the trench, long drawn out, for the sewer crossed at an acute angle, and showing that it was in a wet place, and here crossed a rivulet which had its bank still showing on the surface, and also in the section 2 feet underground. (See *Fig.* 22.)

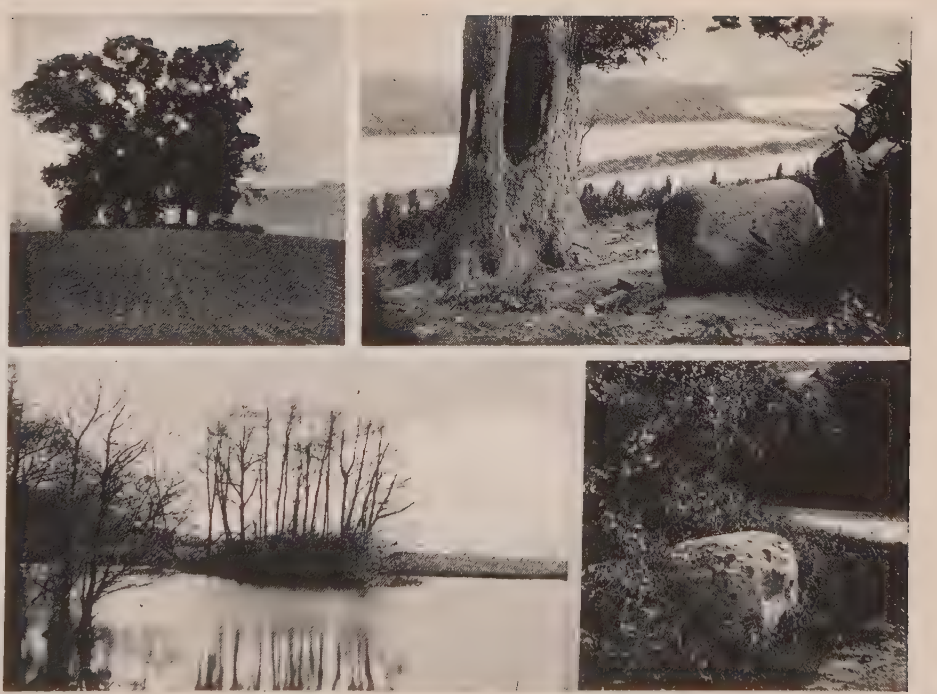
The tracks were seldom stoned roads, probably mostly just dirt-tracks as made by the traffic, with a few stones thrown down, or cobbled in wet places.

PROOF BY MARK POINTS.

Usually this is by a mixture of types of such, and therein is a chance for the unbeliever to scoff. But by careful hunting, leys can be found proved by a single class of points, as I show for mounds in *Figs*. 46 and 47, and for churches in the chapter on these.

END OF THE LEY SYSTEM.

Civilisation killed the ley. With houses planted alongside the cultivation plots, tracks were made to them, often twisting round the edges of the fields, then off in another direction to link up to another house, or perhaps to a village which had evolved. And these new tracks gradually became the keynote of the road planning, the " reeling road, the rolling road, that rambles round the shire," as Chesterton puts it, with here and there a piece of the old straight track incorporated.



YAZOR LEY.

Fig. 59, The Clump. Fig. 60, Mark Stone on the Clump. Fig. 61, Island on the ley. Fig. 62, Mark Stone at Wilmarston.

CHAPTER III.

SOME SPECIAL TRACKS.

There were certain tracks, which if not entirely used for one special purpose appear to have the name of that purpose attached to them.

I am trying to avoid too many place-names in this manual, but these tracks introduce a new factor in place-names which has not been recognised by experts. A large class of such names are not called from any characteristic of the place itself, or the people who live there, or the occupation they follow, but from the track passing through, the men who come on that track, or the goods they carry.

SALT TRACKS.

These are now fully recognised, and the supposed routes from Droitwich, the centre of inland salt supply in very early days, are given by the English Place Name Society in their Worcestershire volume.

The roads are called the *Saltways* or the *Salters-way* in early documents, and on them are found such places as Saltway Barn, Saltbox, Salford, Saltridge, Salter's Hill, Salterley, and Salter's Corner.

But I submit that earlier names denoted the salt track, the first being *wick*, varying through *wich*, *wych*, *wyke*, and *week*. The orthodox interpretation of this is from Latin *vicus*, a village, and the meaning given, *village* or *dairy farm*. I find abundant proof that this is an error, and that all the *wick* places are named from being on the salt-track.

All the salt-producing towns end with *-wich*, the salt producing spots on the coast are Wick Marshes, and the *wick* places are most abundant round these, and round Droitwich.

Another salt name, perhaps the earliest, is *white*, *whit*, or *wit*. Whiteways are named in Gloucestershire, Surrey, and Herefordshire, and a Whitman's Wood, north of the Malverns. There are instances in records of the same places having *wich* and *whit* names, and in addition to the male salt-carrier, the Whitman, a female one is recorded in Wicksters Bridge, near Frampton-on-Severn.

I give examples of salt-tracks indicated by all these names in alignment.

HEREFORDSHIRE.—Whitfield House ; Hoggs Mount (Hereford) ; White House (Tupsley) ; White Stone ; Westhide Church ; Whitwick Manor ; White House ; Moat ; Droitwich.

HEREFORDSHIRE.—Shelwick Ford ; Winn's Green ; Red Wych End Farm ; Salwarpe Church ; Droitwich Town ; Impney Hill, Droitwich.

HEREFORDSHIRE.—Wickton Court, Humber ; Wichenford Church ; Salwarpe Church ; Whitton, a suburb of Droitwich.

SWINDON MAP.—White Hill ; Chapelwick Farm ; Ruffinswick Farm ; Uffington Church ; Petwick Farm.

SWINDON MAP.—Whitaker's ; Weeks Farm ; Salt's Hole ; Hannington Wick ; Buscott Wick ; Bampton Church.

DARTMOOR MAP.—Sticklepath Crosses (two) ; West Week ; East Week ; Way ; Great Week ; Bishops Stone ; White Stone ; Bovey Tracey Church ; Way Barton on Teign Estuary.

DARTMOOR MAP.—Way Barton ; Whiteway Barton ; Ham's Barton ; Whiteway House ; Whiteway Wood ; Whitestone Wood . Both these leys come to the same salt producing spot.

GLOUCESTERSHIRE.—Ashleworth Ferry (over the Severn); Ashleworth Church ; White End ; Wickridge Street ; White End ; Whiting Farm ; Wind's Point.

At this last spot, a pass over the Malverns (corrupted, I think, from *wynne, white*), it meets another salt ley from Droitwich, as it does not itself go in a salt direction.

CHIP OR CHEAP TRACKS.

The earliest need for a track was to fetch flints, and here I think is the name, an onomatopoetic one, describing the sound of knocking off flakes of flint. *Chip, chap,* *chop*, and *cheap* are all akin, and the trading towns were such as Chipping Norton and Chipping Camden; the trading streets, Cheapside in London, Beaulieu, Newent, and Derbyshire. The Chapmen were early traders, and give name to a Chapman's Ford, a Chapman's Sands, and five Chapman Barrows, sighting mounds 1,500 feet up on Exmoor. Places as Chepstow and Chipstead are from the passing flint trader. I think, too, that in the *knapps*, which are hillocks and sighting points, we have other trading spots for the flintman, for there are Knapper's Barton and Knapper's Farm, and a Flinty Knapp, and those who chip off flints are still called knappers.

Evidence that barrows were often trading places for flint flakes is found in the fact that quantities of these are often found, not merely with the burial, but scattered all through the earth of the mound. Excavators have been unable to explain this.

POTTERY TRACKS.

The miller at Rhos-goch told me, concerning a hill I noted up the valley, and enquired the name of, "They call it the Red Hill, and it often puzzles me why, because there is never anything red about it at any season." This put me on the red track, and I found them going to the site of an ancient pottery in the Kiln Ground Wood, at Whitney-on-Wye, that made ages ago, red wares, as follows:—

Black Hill (1,650 ft.); Redborough; Pottery site; Red Ley; On "Roman road," for 2 miles; Red House.

Craig-y-Fuddoi (1,500 fet.); Rhos-goch (red marsh); Pottery site; Red Gates; on a mile of straight road; Burton Hill.

Red place-names are abundant.

One of the ancient New Forest Potteries is at Crock Hill, and we have a Crock's Hill here. The word crocker indicates the trader in pottery, and is found in such names as Crocker's Ash.

VARIED TRADING.

Huck, *huxter*, and *pedler* give trader's names to many places, and as regards things carried, *iron* names are found, while there is a mark-stone on Hergest Ridge named from the sharpening stones (a necessity in early times and sold there), called the Whetstone, which name is found in other places.

That *mark*, found in scores of place-names, indicated the sighting points is certain, and it gave name not only to the marchant or merchant who traded at them but to the markets which grew to be held at such stones.

We are particularly fortunate in our Herefordshire village of Pembridge in having still remaining the three stages of evolution of the market there. Firstly, the ancient mark-stone, quite an unmistakable one, close to the pillars of the market-shed. Secondly, used to support an oak pillar, the socket-stone of the 14th Century market-cross, whose steps were so convenient to display goods. Lastly, the delightful oak-timbered Market House of Tudor date (see *Figs*. 50 and 51), which gave shelter to buyer and seller.

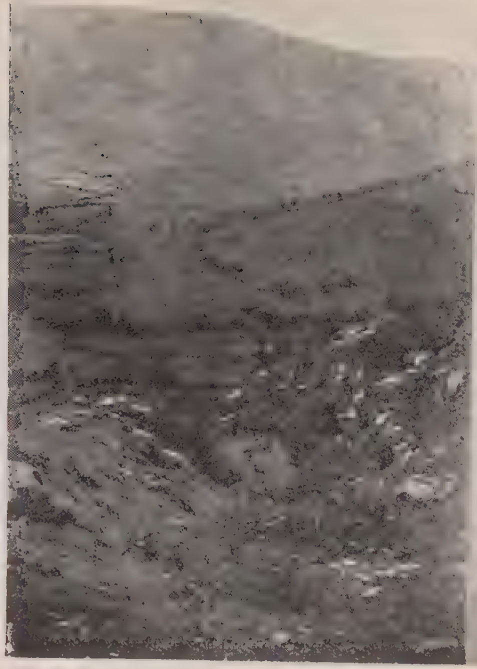
HILL TRACKS.

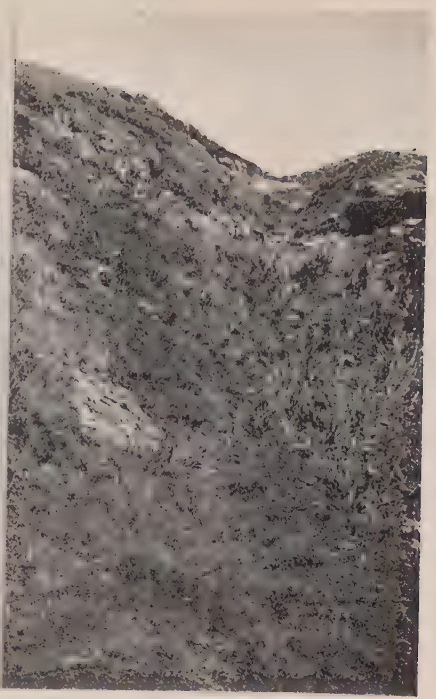
In these lie the strangest, yet clearest proof of the reality of sighted tracks imaginable.

I found none of the Hillend places to be on the end of hills, or even on high ground. The two Hill Courts I know are on plains, and not near a hill. With one or two exceptions, other hill places are not high up, nor near hills.

Motoring back from Tewkesbury over the Hollybush Pass, I noted the nose of the motor to be fixed on Chase End Hill for half a mile, and, on the map, found the ley to pass through Hill Court ; Pendock Moat ; Hill End ; and confirmed by roads.

Then I found, that out of ten Hill End or Hillend places, seven aligned to a definite hill-top, or a hill-ridge, through another hill-place, and sometimes two or three. These chiefly in the Malvern Hill district.





LLANTHONY.

Fig. 63, Down hollow track to mountain peak. Fig. 64, Up hollow track to notch.

Hillhampton ; Hillend Farm, Cowarne ; Hill Farm, Castle Frome ; align to Malvern Hill Ridge above Colwall.

Vallum of Sutton Walls Camp ; Liver's Ocle Chapel ; Hillend Farm, Cowarne ; Hill Farm ; North Hill on Malvern Range, align.

LAW TRACKS.

Sir Lawrence Gomme has done all the pioneer work for these, and given it in his *Primitive Folk Moots*.

The early Courts, whether called Birlaw Court, Folk-moot, Gemot, Hundred-moot, Hustings-court, Shire-moot, Thing, or Witenagemot, were all held in the open-air, chiefly at barrows, but all (as I have discovered) at sighting points on the straight track.

In Scotland, the points were often called *law-hills*, or *laws*, and the court-day the *law-day*, as it is in the records of Leominster Town.

Gomme points out the *law-day* was corrupted for place-names into *lady*. So all over the country we have Lady Oak, Lady Mead, Lady Barrow, Lady Harbour, Lady Pool, etc. Some of the Holy Wells called Lady Well might be called from Our Lady. But not all. At Brampton Bryan, Herefordshire, is curious confirmation of the law derivation in Laugh Lady Oak, where is a well. The deputy judge at the law-courts was the Laughman.

Thing and *tin* and *ting* are elements indicating these courts, as in our local Thinghill. At Tynwald Hill, an artificial mound in the Isle of Man, the parliament of the island still proclaims its laws in solemn court.

Points with *lady* or *law* names may not mean that courts were held there, but that they were on the track, where on the law day, lawyers passed from one court to another.

The Yew and Ash, three miles out of Hereford, marks the spot, as recorded by a stone, where up to the coming of railways the High Sheriff of the county met with his javelin-men in state, the Judges travelling from Shrewsbury to Hereford assizes.

FAIRS AND AMUSEMENTS.

I am not sure whether the tracks had places on them named from persons travelling past for these purposes, but certainly mark-points on the track were used for such gatherings, and they must not be omitted from this guide.

The mounds on high ground were often the places of assembly, whether for fairs, as such larger gatherings are called, combining trade and amusement, or for the latter only.

Some of these were large; Weyhill, Danebury Hill in Hampshire, St. Giles great fair on its hill at Winchester, Stone Green Hill, Lincoln, Dane Hills on Easter Monday, Burrow Hill on Whit-Monday, both in Lincolnshire.

In Herefordshire, the flat-top mound at St. Weonards was the scene of a village fête, and at King's Capel Tump, in Whit-week, the village folk still assemble for dancing on the pretty circus-like enclosure.

Fair finds its way sometimes into place-names, in such as Fair Oaks Farm, Fair Tree Green. And I know that the big Braun (Brampton Bryan, Herefordshire) horse fair was centred round the large tree in the middle of the village.

Two bits of evidence that fairs were held on the old straight track come to mind. In *The Pilgrim's Progress*, Bunyan brings his travellers always, be it remembered, on a track " as straight as a rule can make it," through a business and pleasure fair, " a thing of ancient standing," which the pilgrims "must needs go through," and is, therefore, on the track.

The second proof is that the ancient Bishop's Fair, held in May in Hereford city, was always in Broad Street, that is exactly along the ancient five church alignment which I have detailed as going through All Saints Church.

Dancing Hills are found in two counties, and all over England are names introducing *merry* or *merri*, which may, or may not, refer to gatherings for amusement.

CHAPTER IV.

SEASONAL AND BEACON ALIGNMENTS.

The earnest ley-hunter will find, after a time, various evidence in customs, folk-lore, place-names, and the angles of his leys, that in some cases at least, a reason other than making trackways entered into the early alignments, that this reason was connected with sunrise and sunset observation, and in some way affected the history of our religious customs.

As regards the last subject (a most obscure and difficult one), it is I think best to keep a perfectly open mind in the present state of our knowledge of facts, and above all to banish for the present the words "sun-worship," for which evidence is of the slightest, all being assumption, while evidence for utilitarian, perhaps ceremonial, observation of sunrise and sunset is very strong.

It is well to keep in mind (as paganism and idolatry are often regarded as being the same thing) that while plenty of idols are dug up in Egypt, none of native origin are ever found in Britain.

In the end of last century Mr. A. L. Lewis made many observations (the results scattered in transactions of Societies) about alignments to sunrise and sunset being unmistakably found over the stones of certain ancient circles. Mr. Magnus Spence observed the same facts in the Orkneys. Sir Norman Lockyer, Astronomer Royal, did similar work on different circles in the early years of the present century.

All these observers, the last an expert at the work, found evidence which convinced them that in erecting these circles, early man had so arranged some of the stones as to point accurately to the spot at which the sun rose, or in other cases set, at five seasons of the year, namely, Summer Solstice, Winter Solstice, The Equinox, and the half-quarter days. As these last occur, as to the summer side, in May and August, and as to the winter side, in

February and November, there are eight days in the year at which observations might have been made, and at either or both sun-rise and sun-set.

Now, although these were three careful and competent observers, and Sir Norman Lockyer's professional training made him exceptionally so, although their conclusions confirmed each other, the " experts " have never ceased to pooh-pooh the idea that ancient man in Britain could have ever engaged in accurate astronomical observation. Perhaps a certain " woolliness " in Lockyer's style contributed to this, and the fact that he also found alignments made to the rising of certain " warning " stars, which laid him open to the charge that it left very few angles which might not be right for some sun or star rising or setting. These experts seemed to close their eyes to the additional evidence found in ancient customs, folklore, and place-names.

But about 1920—22 another fully qualified observer attacked the problem, one whose professional training was in exactly such careful and skilled observation.

Admiral Boyle Somerville went to a number of stone circles in Scotland and Ireland (not the same ones as the previous observers had undertaken), and sighted alignments over certain of the stones to the points where the sun rose and set over whatever horizon was in sight on the special days necessary for season fixing.

His results confirmed those of the previous observers, and there are signs that the previous scoffers are now treating the subject with more respect.

Let me say at once that ley-hunters should approach this subject with the understanding that it is a complex and difficult one, that map observations, owing to the many factors involved. are quite insufficient, except as a rough help to actual sighting trials on the spot, which are indispensable ; that star-alignments are best left out for the present, that the sunrise angle differs with the latitude, and also with the elevation of the horizon caused by local conditions, and that very careful correction should be made for the varying magnetic difference.

A pocket compass is useless for this work, unless of the modern prismatic type, indicating on a scale of degrees. Otherwise one, not less than four inches diameter.

Seasonal alignments were made because there was no calendar, and definite information of the time of year was wanted for farming operations. This was done by dividing the year into eight parts, and giving information which were the eight dividing days.

It is obvious that if a cross-country alignment over fixed and known points were made to the sunrise or sunset on the desired days, in future years these would give the information to a population at different districts, whereas two local points only would have a limited use. It seems likely that the men who did this gradually became the men of science, of arts, of religion, of magic, and of poetry.

General proof of the antiquity of orientation (as the method is called) is strong. People of the district have been in the habit of going to see the sun rise down the Avenue on Midsummer Day at Stonehenge (*Fig*. 52) for generations past. Churches, both in fact and by early documentary evidence, have always been oriented, although the supposition that this was to sunrise on the birthday of the saint of dedication seems to be of modern invention, being not mentioned until the seventeenth century. Pagan Temples were oriented.

That the orientation of a church was sometimes decided by the track on which it stood is proved by the following instances in Herefordshire.

Out of forty churches with mounds closely adjoining, ten of them orient into the mound (see *Figs*. 53, 54, 55). There are seven instances of orientation to an adjoining church, and at least ten additional cases of churches being oriented to the ley on which they stand.

Place-names, as May Hill, Midsummer Hill, Easterley Camp (with Easterton near it), Hill of the Rise of Day (Isle of Man), and Sunrising Hill, Warwickshire, afford evidence.

About 4 miles W.N.W. of Truro (in the old 1-inch map) is a cluster of four homesteads with most suggestive names

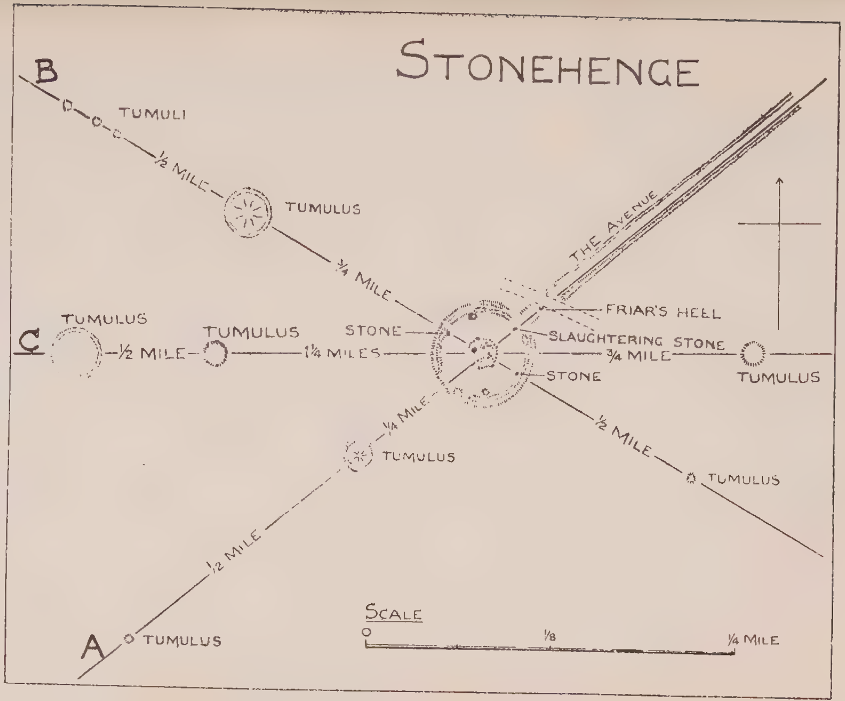
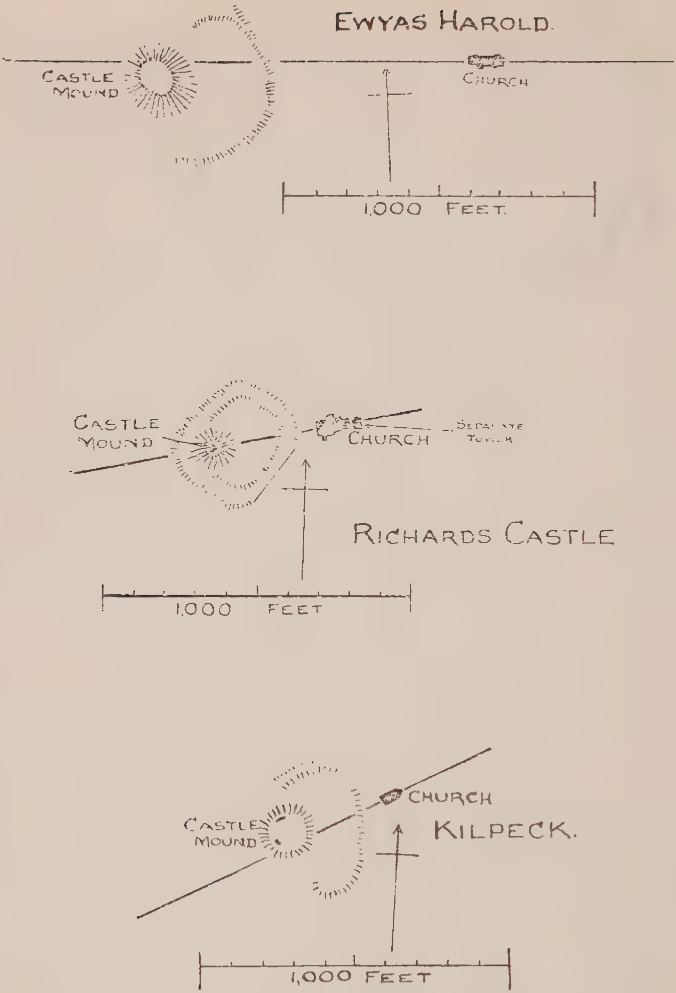


Fig. 52, Alignments through Stonehenge.



Figs. 53, 54, 55, Church and Castle—Mound alignments.

all within half a mile, and arranged diamond-way, the one, called "Sunrising," being to the east. "Winter" points to "Sunrising" at an angle of about 5° below E. "Fair Weather" to the same, exactly E.; while "Summer" is so placed as to form an angle of about 6° N. of E. While the middle one is right for Equinoctial sunrise, I do not suggest that the others are right for other seasonal orientations. But the angles are in the right direction. *Fig.* 56 shows position and angles.

There is another "Sunrising" place about ten miles N.E. of Truro, and an alignment through it at 49° (approximately Midsummer sunrise) goes through two barrows two miles away, and is confirmed by lying on road fragments.

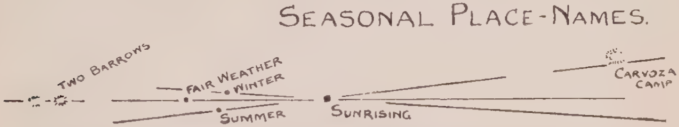


Fig. 56, Homesteads with seasonal place-names near Truro.

Now comes the possible connection of this practice with track alignments. Each one of the investigators I have named incidentally mention that some of the alignments over stones of a circle to sunrise go on to a standing stone or a barrow on a height at some distance, although they do not follow up the clue. Admiral Somerville notes many such, and place-name evidence of season-fixing is given in his remark that one of these alignments from the stone circle on Beltany Hill (Donegal) to a hill summit "is precisely that of sunrise on Bealtaine, May 6."

At Stonehenge, three of the sunrise alignments (see *Fig.* 52) have also strong evidence of being trackways, by the usual type of mark-points, and by passing through barrows near to the circle. The one (B) named by Lockyer for February or November sunrise, not only passes through the two mark-stones near the outer bank, but through three tumuli near together a mile away, besides two others.

At Sunrising Hill (see *Fig.* 48) an alignment at approximately Midsummer angle goes precisely through Middle Tysoe and Ratley Churches, and on to the Three Shire Stones. Llanigon Church oriented to the same angle is also on a ley passing through several confirming points. And I could give more examples of churches oriented to the same ley as the trackway on which they are placed, one striking instance of two churches on the ley.

A traditional phrase given for sunset in a Welsh dictionary reads : " The sun goes down behind his camps." On May Day sunrise at Oxford, choristers assemble on Magdalen Tower, and sing a hymn.

There is some evidence that the word *gold* in place-names refers to sunrise. I found a ley from Cefn Hill pass through the Gold Post (a cot on the mountain), a standing stone, the Golden Well, Arthur's Stone (a dolmen), and to The Knapp. *Gole* is Celtic for " light, splendour."

The facts I have given concerning the alignment of camps suggest (although there is not yet proof) sunrise alignment in some cases, which the Welsh saying confirms.

I must warn observers that the ley-hunter approaches this matter from a different point to the astronomical observer, and that the methods of each are very incomplete to the other.

The astronomer makes one local observation from the centre of a circle to the horizon, and, so far, takes no notice of long-distance alignments, although he could add them. His angle observations are direct.

The ley-hunter works in both directions, makes no direct observations, but only notes long distance points, and plotting these out on the map gets correct angles for his alignments. These angles, although giving useful information, are useless for sun alignments, as they do not consider the horizon elevation. To do this a new series of observations must be made. The ley-hunter is under the curious disadvantage that in giving the angle of his ley he cannot use the astronomer's favourite term "azimuth," for which it is necessary to know whether the alignment is to sunrise or sunset, which he has not yet ascertained. Moreover, the ley-hunter cannot tell, without an actual survey of the ground, at what point the original sunrise observation was made, and he might here find difficulty. I found the orientation of two churches decided by the angle of the one ley, which itself was decided by a sunrise observation made many miles from the churches.

BEACONS.

There is much evidence to connect the beacon fires with sunrise alignments. All over Europe, as well as in Britain, the hill-top beacons were fired on St. John's Day (Midsummer), and Beltane Day (early in May). In Herefordshire this continued until a century ago, and Bell or Beltane Hills and May Hills are frequent, besides our Midsummer Hill, on which I found beacon pits.

It was undoubtedly used also for ordinary track alignments, as indicated in the Bible, and in an Egyptian inscription quoted by Messrs. Hubbard: "Thy mother Nut giveth thee a path to the horizon to the place where Ra is." Nut was the earth goddess and Ra the god of the sun. A Fire Barrow Lane is another bit of evidence, and there is a Fire Stone Cross and a Flamstone place.

I cannot give chapter and verse for the exact way in which a beacon light was used for seasonal alignments. But it is evident that when a sunrise observation from a certain spot was made, it would not be in the same place a few days later, and some way of stabilising the direction would be a necessity. This the beacon light could supply.

The use of ponds and flashes on the ley made the beacon light part of an accurate optical observation. The abundant *cole* and *black* names on tracks are further evidence. Also the many *light* and *bright* names on the track to which I have already called attention.

Beacon and Bacon Farms lie on the beacon track; Tan Hill (often corrupted to St. Ann's), and Brent Hill, indicate the fire station.

CHAPTER V.

A FEW LEYS.

It is dull work reading about mounds and stones and hill-notches in comparison with going out on the face of God's earth to hunt them up. And so, with the hope of stimulating others to follow the example of those few score healthy people who in the past year or two have been out in the fields and moors, with such satisfactory results that dozens of them write giving the alignments they find there, I have put together this little list.

It is by no means all my own work, for my friends have sent me the leys they have traced, to provide a neat array for many parts of Britain. I have added their names. The numbers are those of the 1-inch Ord. Map, Popular series.

A few important homesteads are added in parentheses, some of these are "Bartons," "Halls," or "Courts," almost equal to sighting points in value.

The points of compass, and the places given directly after in brackets, are not exact for the ley, but a rough guide to aid in finding on maps.

ABERDEENSHIRE. S.W. to N.E.

Towie Castle ; Fortress called Peel of Fichlie ; (Ley Farm) ; Kildrummy Castle ; Terperdie Castle.—The Marquis of Huntley.

BERKSHIRE. 104, 105. S.S.W. to N.N.E. (Wantage district.)

With so much written about the White Horse district, it is strange that the nearly straight track connecting the vallum of Uffington Castle on White Horse Hill to the tumulus called Wayland Smith's Cave, and suggesting a ley, confirmed by a church further on, has not been noticed.

(Centre of Little Hinton Village) ; Bishopstone Church ; (centre of Idstone Village, probably a mark-stone) ; Wayland Smith's Cave ; 1¼ mile nearly straight road past two cross roads and Hardwell Barn; lying on S. vallum of Uffington Castle Camp; (ponds near Kingston Lisle); road corner, cross-road called Town End at Grove; (on zig-zag in road at Drayton); (through Black Wood and aligning on two bits of cranked roads near); Great Haseley Church; over ford at present bridge and on zigzag at Cuttle Brook; moat in top corner of map.—A. W.

BRECONSHIRE (South-West). 90, 91. S.S.E. to N.N.W.

Calling at Llangorse, I asked Mr. Price, the postmaster, if he knew of any legend about the lake. "Only that they always say there is an underground passage from Llangorse Church to Castle Dinas." Now this would go through a great mountain, and I have found before that such underground passages (which no one has ever seen) are always on leys. On the maps this ley was found.

Brecon Beacon, 2,608 ft.; Llangorse Church; Myndd-Troed, 1,896 ft., triangulation ord. mark; Castel Dinas Camp, south edge of vallum; Twyn-alt-Cefn ("Tump on the High Ridge"), 2,303 ft.—A. W.

BUCKINGHAMSHIRE. 94, 95. E.S.E. to W.N.W. (Aylesbury district.)

Showing one of the ancient straight "streets" to be aligned through points, although breaking away and coming back at least three times.

Piece of Akeman Street; another ¾ mile; 1¼ miles Akeman Street; (through Aylesbury); straight 5 miles of Akeman Street through Aston Clinton; cross-roads at Wigginton; (zig-zag fragment of road); Northchurch Church; Berkhampstead Castle Mound.—A. W.

CARDIGAN. 78. W.N.W. to E.S.E. (From coast S.W. of New Quay.)

Pen Moel celiau, 710 ft., coastal hill; site of castel; important cross-roads at Synod Inn; hill-point, 1,007 ft.; Troed-y-rhiw cross-roads; Crwyn Stotias (?) Camp; half-mile straight road; Cellan Church; two tumuli on Cair Carn.—A. W.

CARNARVONSHIRE. 41, 42. S.W. to N.E. (South of Llanfairfechan.)

Moel Wnion, 1,902 ft., from which the second and fourth points are to be seen; carneddau above the stream from Aber Lake, with hut circles adjoining; cairn on crest of ridge close to track from Aber Village to Bwlch-y-Ddeufaen, from this the terminal point Moelfre can be seen through a gap; cairn on Moelfre, 1,422 ft. A five-mile ley.—A. Woodhead, B.Sc.

CAMBRIDGESHIRE. 85. N.W. to S.E. (Huntingdon—Cambridge.)

Connington Church; Lolworth Moat; (edge of); Girton Church; Arbury Camp entrenchments; Ferry over Cam at Ditton; Ditton Church; Fleam Dyke, aligns with the Dyke for 1½ miles; Cross-roads at Six-Mile Bottom; The Chantry entrenchments.—Leslie Keating.

CHESHIRE AND SHROPSHIRE. 36, 44, 52. N.N.E. to S.S.W. (Manchester—Nantwich.)

Roman Camp, Manchester; Knutsford Church on a knoll; "Roman road" along bye-lanes for 5 miles; moat, Wood Farm, Worlston; (parish boundary between Nantwich and Willaston for ¼ mile); moat at Churche's Mansion, Nantwich; (Church Farm); moat, Mickley Hall; (cross-roads, The Rookery); Calvershall Church; moat at Willaston, Shropshire; tumulus within 250 yards; moat, Faulsgreen; West shoulder of hill in Hawkestone Park with earthworks and mounds.—Lt.-Col. A. T. Powell.

CORNWALL. 146. W. to E. (North of Truro.)

St Agnes Beacon, near coast, 592 ft.; two barrows on Penhallow Down; north vallum of camp on Round Down; north edge of Barrow Down Camp, close to Grampound Road Station.—A. W.

DERBYSHIRE. 45. W.S.W. to E.N.E. (Matlock district.)

Although no church now exists at Birchover, where I live, the ancient site of one has often been pointed out to me by old people, and I found this ley to pass through it, and then to follow a little-known track for Robin Hood's Stride. Arbor Low, a stone circle; Hermit's Cave;

site of Birchover old church; Wensley Church; Oaker's Hill, a "one tree hill," to be seen all over the Dale; (on a road near Smedleys, Matlock Bank); The Wishing Stone.—Edgar Drury.

DEVON. 137, 138, on large Tourist Map. S.W. to N.E. (Plymouth to Moretonhampstead.)

Dartmoor is particularly rich in menhirs, stone crosses and tumuli, with many alignments. This one has been tested on the six-inch map, and some of the points are not marked on the 1-inch map. Drizzlecombe is a valley below Didsworth Warren.

One of the three large menhirs in Drizzlecombe; The stone-row starting from this, not absolutely on the ley but closely on its general direction; "stone cross," 5 furlongs S.E. of Nun's Cross Farm, really a longstone not a cross; three-quarters of a mile of straight road; stone-cross on Hameldon, half-mile E. of S. from Grimspound, at the angle of a parish boundary; stone cross in town of Moretonhampstead, outside S. gate of churchyard.—Major F. C. Tyler.

DORSETSHIRE. 140. N.E. to S.W. (Dorchester.)

Tolpuddle Church; on Roman road; Dorchester Church; Winterborne St. Martin Church; (straight road up Black Down, 1 mile); (cross-roads); tumulus on While Hill.—A. W.

ESSEX. 240, 241, 257, 258. W. to E. (Luton—Clacton-on-Sea.)

Wallbury Camp; Little Hallingbury Camp; (Monkbury); on half-mile of road; (hill 289 ft.); Wolaid's Ash; Cross-roads; Moat; Ford End Church; ford; Little Leighs Church; (Bishops Hall and water); Fairsted Church and (Hall); un-named Church; (Falkbourne Hall); (Elmhall Hill and Farm); Rivenhall End cross-roads; (hill 235 ft.); Then off map, Mersey Island Beacons; Brightlingsea Ferry; St. Osyths Priory. Note the Little Leys Church and Little Camp.—Miss E. M. Slader.

GLOUCESTERSHIRE. 92. N.E. to S.W. (Past Gloucester.)

Note that this is an "Elm" track. Elmstone Hardwich Church; Haydons Elm cross-roads; (approximately on road for 1¼ miles); Quedgeley Moat; Four Mile Elm cross-roads.—W. L. Cameron.

HAMPSHIRE. 123. E.S.E. to W.N.W. (Andover to Basingstoke.)

Harewood Peak; (Freefolk Priory Farm); Freefolk Church; Laverstock Church; Ashe Church; Deane Church; (Crossway Farm, Worting). This ley is interesting, because the present main road from Andover to Basingstoke follows its general direction, so much that it touches or crosses it seven times, the ley going through both towns.—A. W.

HEREFORDSHIRE. 80, 91. N.W. to S.E. (Kington—Black Mountains.)

Sir John Cotterell had called my attention to a compact clump of trees on a bank on his estate, containing a large cushion-shaped stone. He took me to see it. (*Figs.* 59 and 60.) Then after passing many times on the Hereford–Kington high road in dull weather, one day, looking over The Clump to Pen-y-Gader on the Black Mountain Range, I saw it aligning through the ruined tower of Yazor Old Church. With my head under the focussing cloth to photograph, there came an exclamation from my helper: "Look here!" And in the hedge three yards away was a fine mark-stone. The photograph, *Fig.* 58, shows all four points aligning. On the map I found both the Wilmarston Stone (*Fig.* 62), and the Capel-y-Ffin Cross Stone, both of which I had photographed as mark-stones, also to align.

Birley Hill; island in Yarsop lake (*Fig.* 61); mark-stone on Kington highway; tower of Yazor old Church; The Clump, with mark-stone; mark-stone on Dorston highway at Wilmarston turning; smaller one near; small earthwork Camp on Cefn Ridge; Churchyard Cross, Cwm-y-Yoy; ford and path through Churchyard at same place; paved mountain pass over Bishop's Darren; Pen-y-Gader, 2,624 ft.—A. W.

HEREFORDSHIRE. 92. S.E. to N.W. (Ross—Monmouth.)

Capt. P. B. Symonds called my attention to the Queen Stone aligning through Whitchurch Church to a camp (not marked on the Ord. Map), on the Great Doward. I found the ley to be one I had previously marked through Ross-on-Wye.

Great Doward Camp; Whitchurch Church; Queen Stone; Ford at Goodrich; Corpse Cross and Market Place, Ross; Old Gore Cross; Much Marcle Church; (Hellens, ancient mansion); Preston cross-roads; Vallum of Wall Hills Camp.—A. W.

HEREFORDSHIRE (West). 91. S.W. to N.E.

Note the curious fact that both initial points are "Little." It is a little, *i.e.*, a short ley 11 miles long.

Little Mountain, 995 ft.; Clifford Priory; Clifford Church; Clifford Castle; (Llwyn Gwlym); (Dole-y-canney); Little Hill, 1,609 ft.—Dr. O. B. Trumper.

HERTFORDSHIRE AND CAMBRIDGESHIRE. 85, 96. (Wimpole district.)

Moat on map 96; Avenue at Wimpole, impinging on Ermine Street at an angle, and not now used as a track. Map 85; Basin or pond; (Wimpole Hall); Knapwell.—G. Kenneth Strugnell.

HERTFORDSHIRE. 106, 107. S.E. to N.W. (Hendon—Watford.)

A line from Hendon Parish Church to Leigh Gate coincides with the road down Hendon Church Hill.

Hendon Church; Burnt Oak; St. Lawrence Whitchurch; Stanmore cross-roads; (Cassio Bridge); Sarratt Church; ford over Colne; Lee Clump.—C. L. Davis.

KENT. 117. E. to W. (Southern half.)

A part rich in leys. Stick a pin in Minster Church and the straight-edge reveals several, one running down from Westgate to the lower coast over four churches, a chapel, an ancient Court, a windmill, and landing you at the edge of Shorncliffe Camp. So with Walmer Castle or Harbledown Church. And regarding a group of three tumuli near the coast north of St. Margaret's, a line through two of them runs over two churches. The ley below starts from the middle one.

Tumulus ; St. Nicholas Church ; West Langdon Church ; Coldred Church ; Shepherd's Well Church ; (West Court Farm) ; (Broome House) ; (Coleshill Wood).—A. W.

London. 115, 107. E.S.E. to W.N.W.

South pavement of Pall Mall ; St. Martins-in-the-Fields ; (on part of the Strand) ; St. Mary-le-Strand, site of ancient Maypole ; St. Clement's Dane ; St. Dunstan's, Fleet Street ; (Through Bunhill Fields) ; Site of ancient Mount, described by Borrow in "Romano Lavo-Lil," approximately at Arnold's Circus, Shoreditch.—A. W.

Merionethshire, &c. 51. W. to E. (Above Ruabon.)

Vale Crucis Abbey ; Peak on Ruabon Mountain ; Cross Street cross-roads ; Camp north of Ruabon ; (cross-roads, Eyton) ; Plassey Moat ; (White House) ; 1½ miles straight road ; Tushingham-cum-Grindley Church.—A. W.

Monmouthshire (Black Mountains). 91. N.N.W. to S.S.E.

I had noted a hollow mountain track climbing steeply the mountain-side to a notch above Llanthony, and on looking back down the track found it to align to Chwarel-y-Fan, 2,228 ft.

Chwarel-y-Fan ; Broadley Farm ; Mountain Track and notch (*Figs.* 63 and 64) ; Llancillo Church and Mound ; Llancillo ancient iron forge and ford ; Grosmont Church ; Garway Church.—A. W.

Norfolk. 66, 57, 58. (North Norfolk.) W.S.W. to E.N E.

Earthworks at Narborough ; Castleacre Castle Mound ; earthworks at North Elham ; (on main street of Bawdeswell Village) ; (Manor House S.W. of Aylsham) ; Round Hill earthwork at Burgh-by-Aylsham ; Skeyton Corner Cross-roads ; Crostwight Church ; (Walcott House, near Happisburgh) ; Coast at Happisburg.—W. A. Dutt.

E

NORTHUMBERLAND. 7. W.N.W. to E.S.E. (Newcastle district.)

Aydon Castle ; Newton Hall Mound ; Tree Clump with earthwork and moat ; Ovingham Church ; (over Tyne, fordable here) ; Mound of Prudhoe Castle ; (road junction at Greenside) ; ford at Winlaton Hill ; Ravensworth Castle.—C. Shepherd Munn.

OXFORDSHIRE. 105. E.N.E. to W.S.W.

A ten mile ley, continuing beyond Sinodun Hills another ten miles along the Portway through Berkshire.

Beacon Hill, 800 ft. ; Shirburn Castle in moat ; Pyrton Manor and moat ; Cuxham Church ; Sinodun Hill with earthwork.—Mrs. E. M. Markland.

RADNOR. 80. N.W. to S.E. (Hundred House—Hay.)

South edge of Tyn-Green Castle Camp ; Llansaintfraed Church ; north edge of Fforest Colwyn moated enclosure ; Penarth Mound ; cross on Red Hill ; (Lane Farm) ; Wye ford at Hay Bridge ; site of ancient church in Hay ; Cusop Church.—A. W.

SHROPSHIRE. 60, 61. W. to E. (Longmynds--Ironbridge).

Notch on Lord's Hill, Longmynd, visible from my window, as I live almost on the ley ; Castle Pulverbatch, a mound ; Church Pulverbatch ; Upper Moat ; Ford on Cound Brook ; (old bye-path through Butts Fields) ; cross-roads at Pitchford ; Cressage Church ; Buildwas Abbey.—Mrs. John Clare.

SOMERSET. 120. E.S.E. to W.N.W. (Glastonbury—Coast.)

Glastonbury Tor ; Woolavington Church ; (road junction, Pawlett) ; Stockland Bristol Church ; ancient Church on coast.—A. W.

SOMERSET. 119. W. to E. (Porlock Hill district.)

The Whitstones are dull grey, not white, flat slabs, with their faces (both at the same angle of inclination) aligning across this ley. About 2 or 3 yards apart.

Barrow ; barrow ; (cottage at County Gates) ; (bridle path) ; mile of main road ; The Whitstones ; (Woodcocksley Farmhouse) ; Ley Hill ; (Brockwell) ; Timberscombe Church ; Monksilver Church.—Robert Rule.

SUFFOLK—ESSEX. 86, 97, 108. N. to S. (Bury St. Edmunds—Hadleigh Castle.)

Soldiers during the war unearthed prehistoric urns on a rough knowl on the Glebe at Wickham Bishops. I then investigated, and excavated a clay floor with finds showing it to be a prehistoric settlement. About 150 yards south, I also found proof of a Roman settlement. About 1,000 yards north, a straight cart-road leading to a farmhouse, and directed straight for the knowl, gave an indication which led to my tracing out this ley.

(Brickey Ley House); five roads crossing; (Vine Fields, Bury St. Edmunds); mile of straight track, moat at side; Newton Moat; half-mile straight road; Coldham Church; (Mount Farm); Straight track through wood; (Cranmore Hall); Liston Church; straight track to Auberries; mile of straight road to Bulmer Tye; Catley Cross; (Birch Leys); (water in deer park); Marks Hill Church; one-eighth mile Cutledge Lane; Leaping Wells; (Hoe Hall); Little Bransted Church; quarter-mile straight road to Isham Farm; Celtic settlement; Roman burial ground; (edge of Wickham Hall Moat); Mount at Clement's Green Creek and Saltings; (high ground at Hockley, 256 ft.); quarter-mile straight track; (to the Thames half-mile east of Hadleigh Castle). This ley I have further traced north to Thetford and the Devil's Punch Bowl.—A. H. Macmurdo.

SURREY. 114, 115, 107. S.S.W. to N.N.E. (Banstead to Thames Tower Crossing.)

Banstead Church; Streatham Church and cross-roads; (approximately on road); (Tulse Hill); on the Clapham-Newington high-road for two miles; over the Thames at Battle Bridge Stairs opposite the Custom House; Aldgate Pump; on The Broadway; on London Fields road. In addition it passes through several London Churches, not sound points until their antiquity is proved. The Thames is crossed at this point by several leys; one on the straight Great North Road for Tottenham, and another from Croydon and beyond.—A. W.

Warwickshire. 78. N.N.W. to E.S.E. (Lutterworth district.)

Newlands Mill; Park Farm Moat; Cross-in-Hand on Watling Street; North Kilworth Church; Sibbertoft Church; Moot Hill tumulus; on road near Clipston Station; then off the map.—Commander A. G. A. Street.

Wiltshire. (Salisbury Plain District.) 1-inch map. W.S.W. to E.N.E. Warminster to Easterley Camp.

I give this on account of the seasonal significance of the name, which shows that a ley could be named from a seasonal alignment, this one being an azimuth of 73°, right for May-day sunrise at a high elevation of about 8°.

Tumulus near Warminster; Imber Church; Butler's Cross; (over Easterton Down); on a mile of straight footpath; south vallum of Easterley Camp; S. edge of round earthwork; " circular plantation " at 746 ft.—A. W.

Worcestershire. 81. N.W. to S.E. (Stanford—Pershore.)

Cross Severn at Stanford Bridge; (The Grange); (Whichenford Court); (dogs-leg on Martley road); Worcester Cathedral; a church in Worcester; Moat; Moat at Crookbarrow Hill; Stoulton Church; (cross-roads); on half-mile bye-track, north of Pershore.—A.W.

The object of this chapter was to represent as many observers as possible, but another aim to include many counties has caused a more frequent appearance of the initials A.W. than was first intended.

CHAPTER VI.

WORKING INSTRUCTIONS.

Field Work.—This should be the chief objective, for although there are two distinct branches of observation, field work and map work, each of which helps the other, to rest content with merely tracing leys on maps leads to error.

Small scale maps (the two and four inch to mile motoring maps) are practically useless except for checking leys after working out on larger scale maps. The one inch to mile Ord. Survey maps (and the Popular series provides the largest area for the money) are the standby. But even this is not quite large enough for local detail, and I have had to get as well the six inch to mile sheets, when I wanted to trace a ley completely.

The Basis.—The pre-historic alignment made across country was exact, not "somewhere near." If the sighting points had all been on the same level as the eye, there could have been no original error. But as in practice the sighting points were on ridges and dips at different level, some slight error would creep in, in taking a perpendicular by eye down to a low point. But it would be an error of small amount.

I illustrate this in *Fig.* 58, where, in the distance, is the hill-top initial point (Pen-y-Gader), then a stone in the foreground hedge, and between, a church tower (on the site of an early mark-stone), and a clump of trees, a visit to which disclosed a fine mark-stone on its left edge.

Note that in this instance all up to this point had been found by field work, but that map work afterwards showed that the alignment passed through another roadside mark-stone and a churchyard Cross, both of which had already been found and photographed in field work. Also that the map survey showed the line to pass through an island in a large pond, the early character of this being then verified by a visit. A camp on a ridge was also found on this ley. This example shows how field and map work should run together.

SIGHTING POINTS COME FIRST.—Do not work on roads or tracks at all to begin with, they are not a true basis, and are often misleading, even if old.

After all, the nearest way from place to place, for present road makers, is a straight line and always has been, So a straight track may mean nothing. Nevertheless, the experienced ley-hunter, especially in the field, often gets a suggestion from a bit of straight lane or path, and so does a motorist or cyclist when for some distance some sighting point keeps exactly in the same position in front of him.

But such must be taken as suggestions only, all the real work has to be done by finding sighting points, or their successors, in alignment.

Begin as pre-historic man did—with the mark points. It is on this point that the voluminous writers on Stane Street, Pilgrim's Way, and the Ridgeways have failed to get back earlier than a few hundred years, whereas the O.S.T. was laid out as many thousands of years ago.

INITIAL POINTS.—It is not always easy, or even possible, to discover these, as it can only be done when a ley comes to a hill-point (or traditional well), which local knowledge tells to be a probable starting point. Often one is spotted, not the other. The proof of a ley over, say, four mark points, unfortunately gives no indication whether it runs one or many miles beyond.

LOGICAL PROOF.—The basis is to find a sufficient number of acknowledged sighting points falling into alignment, and proof is more complete if some present-day cross-tracks and fragments of straight roads or paths fall in line.

Do not put forward too low a standard of coinciding points as proof. For example, two mark-points and a present-day straight length of road is not sufficient. The number of mark-points in alignment to be accepted as fair proof cannot be given without knowing how many such points are on the map in the area tested. The law of coincidence makes the probability of an accidental three-point alignment depend on two factors—the angle of error allowed in accepting points, and the number on the map. The first can be settled by accepting a quarter degree as the limit of error. This settled, if only three accidentally placed points are on the sheet, the chance of a three-point alignment is 1 in 720.

But this chance (by accidental coincidence) increases so rapidly in geometric progression with each point added, that if 10 mark-points are distributed haphazard on a sheet of paper, there is an average probability that there will be one three-point alignment, while if only two more are added to make 12 points, there is a probability of two three-point alignments.

It is clear that a three-point alignment must not be accepted as proof of a ley by itself, as a fair number of other eligible mark-points are usually present.

A ley should not be taken as proved with less than four good mark-points. Three good points with several others of less value like cross-roads and coinciding tracks may be sufficient.

EXCAVATIONS.—If to locate the assumed position of the surface of a track underground, first get the tenant's permission. Dig a trench across the assumed direction, a yard wide, and keep one wall clean and upright, as seen in *Fig.* 22.

On coming to the stony or cobbled surface, go right through it this time and get a photograph of its section. Then very carefully uncover another yard of its surface, and take a photograph.

For investigating at barrows or mark-stones, the permission of the owner as well as the tenant is essential. Opening a barrow is very special work, best done with aid of someone of previous experience, the essential being to get down to the centre, below ground level, by a wide trench right through.

In digging round a mark-stone it must not be all round, or the disaster of its falling might result. Do it at both sides, leaving a key of untouched earth at the ends.

In all such digging, the aim should rather be to do a small bulk thoroughly, than to dig carelessly big holes. Every spadeful of earth must be carefully sifted through the hands to search for flint flakes, which are easily missed. I watched a few weeks ago the workers under Mr. Davies, of Bristol University, and Capt. Symonds, searching the debris heap at the mouth of King Arthur's Cave on the Wye—which previous diggers had thrown out. In one bucketful I saw them find teeth of almost all the cave animals of the period. Cave bear, woolly rhinoceros, hyena, and cave lion. Also a flint flake left by man.

MARK POINTS.

I will try to give these in order of their value as proof.

Mounds.—If pre-historic (and there is little real danger of mistaking such), these are the best of mark-points, except where they are thickly grouped together, as on Salisbury Plain, where it seems probable that a number were added as burial mounds beyond those first used for sighting.

Moated mounds, and mounds on camp entrenchments are included in this heading.

Mare's nests—Mining, quarry, pit, or pond-excavation heaps.

Stones.—In theory it is difficult to distinguish a mark-stone from other casual stones, but not in practice, for a mark-stone was always selected to appear different, either in shape, size, or kind of stone from other stones about the district.

Mark-stones are either unworked, or only very slightly worked, or *pecked* into shape. They are of every shape except perhaps flat upright slabs.

Mare's-nests—Protection stones against walls or house corners. Flat or worked boundary stones. Roadside stones selected from road material, left to protect ditches, etc.

Circular Moats.—I regard these as fairly safe mark-points, unlike the square moats, which although often on a track are later and more doubtful.

Castle Keeps on Mounds.—These I have found, from ley evidence, to be invariably on earlier mounds, perhaps enlarged to one side.

Ancient Beacon Points.—These are sound points. But farms with beacon names may only be on a beacon-track.

Wells with Traditional Names.—These, if mark-points, must be initial points, not on a selected site like the others. A sighted track usually comes to them.

CONFIRMATION POINTS.

We now come to a series of points which do not rank quite so high as proof of a ley, although when known by an ancient place-name, or with other indications of antiquity, are very valuable.

Churches.—These of course evolved in historic times. Yet I find that the great majority of rural churches were on " Pagan sites " (stone or mound), and with precautions to be named are good proof.

Ancient Crosses.—Either churchyard or wayside.

Alignment of Road.—When at least half-a-mile of road or track of ancient name aligns on a ley, it has value. Bits of other roads or tracks aligning can only be taken as slight confirmation, to be added to other evidence.

Fords.—These count as evidence, but still stronger if with a deep notched cutting down to them.

Tree Groups.—Have a high value if on a hill-top and with an ancient name and suspicion of earthwork. But others have none. With all trees as marks, there is the fact that, at the best, they can only be the successors of marks in pre-historic times, with no possibility of proving continuity. I have noted the special significance of Scotch Firs.

Mare's-nests—Groups planted in recent times for commemoration.

Single Trees.—Only of value if with an ancient name, as Gospel Oak, Cold Elm, Cross Ash, etc. Then they really are on tracks. In the Frontispiece I have illustrated a splendid instance.

NOTCHES.—Usually ancient, as indicated by their old names of scar, nick, bwlch, etc. But the weak point is that any modern or curved road if worn deep on a bank may show as a notch. Still they are often good evidence.

CROSS ROADS.—These can be regarded as mark-points if known by really ancient place-names. Otherwise as confirmation only.

They are invaluable for detecting the original mark-points of that class of straight road marked on the Ordnance Maps as " Roman " (and often really surfaced by Roman engineers), of which the Fosse Way is another example.

I show an instance of this in the long straight track in *Fig.* 27, where the seven cross-roads indicated by circles marked E align, and thus point out the ley continuing the present road. This ley goes over both an eighth cross-road near the mill and the site of the present river bridge.

ZIG-ZAGS.—These in modern roads are always significant, as indicative of an old straight track crossing at this point. In the Badbury map again, *Fig.* 27, an example is enclosed by a circle at foot of map.

JUNCTION OF TRACKS.—In open country the junction of several tracks or paths at one point should always be made the subject of investigation, as it often indicates a ley, although, as in the one marked with a circle as G in the above map, it may lead to nothing. But I have not found the very symmetrical star-crossings of paths (of which an example is marked by a circle H) to be really ancient.

CAMP ENTRENCHMENTS.—These are not mark-points, as they evolved alongside leys, but when leys are found to lie on bits of them, it is the best type of confirmation.

ISLANDS IN PONDS OR LAKES.—Under some suspicion that they may have been formed when cleaning out the pond. But leys proved by other evidence so often fall on them that they almost rank as mark-points.

PONDS.—So thick on the ground, and so many modern, as to be unsafe as proof. But the strange way in which leys pick them out, and the pitched causeways often found in them, make them strong confirmatory evidence.

SQUARE MOATS.—These are usually of late origin, and although they may be evolved from an earlier island are quite unsafe. It seems to have become the fashion to surround a mansion, whether on a mark-point or not, with water.

ANCIENT HOMESTEADS.—There are two great weaknesses in accepting these as proof, although I am convinced that practically all going back to Anglo-Saxon times were on mark-points. So many are on the ground that if the number be distributed haphazard over a sheet of paper, and a straight line drawn at random, several will fall on it. And as it is not easy to decide which are really ancient, it is safest to omit them as proof.

But these objections are not so strong in the cases of the "Halls," which my Essex friends find to be good proof, the "Bartons," of which Devon ley-hunters make the same report, and the "Courts" in my own district, always assuming that they are really ancient names.

Such can be taken as confirmation, and in some of the ley lists I have included them, marked by being in parentheses.

Striking old place-names also often make them convincing.

MAPS.—The early Ley-man, aligning say between two hill-points 30 miles apart, and laying down say two intermediate ridge mark-points, at about 10 miles intervals, secured all four points in an absolutely straight line as regards one plane, allowing him an insignificant error while making by eye a perpendicular from a ridge to a valley point.

The map maker, however, in attempting to show a globular surface on a flat one, inevitably distorts this straight line, and introduces an error. This can be ignored when keeping to one sheet of a 1-inch map.

But let us suppose that two of the aforesaid points are in one map and the other two in an adjoining one, and in addition it is required to extend the ley to a third map.

Firstly, I want to know from the map-makers how I am to join up the maps ?

Secondly, I want to know from the map-maker, whether when joined up as he wishes, the aforesaid four mark-points, which sighted to-day across country are seen to be in a straight line, will be in a straight line on his map ? Or will it be on a slight curve which will vary with latitude, longitude, and direction of alignment ?

I do not find any answer to these questions which are clear working instructions. I can only, therefore, give my own " rule of thumb " method, which seems to answer.

The edge of one of the maps to join must be cut to its working edge, which will probably be found to be a slight convex curve. If so, this curve must touch the curve of the other map at the point where the ley has to cross. In addition, of course, roads near must be made to coincide.

In tracing leys on maps, I fasten the sheet or sheets on an adequate board, put pins into two mark-points, and apply a straight edge. A stretched black thread is useful for a trial, but not, I think, as a working plan.

Maps in cut sections are valueless for ley work.

Communicating Leys to Others.—Of the leys sent to me, I have great difficulty in identifying many on the map, as the names are all unfamiliar, and usually not on small scale maps, which are the only ones I have available. I think I obviate this in the plan adopted in my ley-list.

The County should always be named, then the number of the Popular Series of Ordnance Map (which is getting to be the standard), and the rough direction of the ley, and two places very roughly on its direction (those marked on all maps), market towns or lofty hills. Without this information, the ley might as well not be sent, for any use it can be to the receiver.

PHOTOGRAPHIC ILLUSTRATION.—Illustration of individual mark-points (as stones or mounds) presents no difficulties, remembering that the main lighting should never be from behind the camera, as side lighting is always best.

It is soon found that a subject is best illustrated on the line of its ley, especially if down a straight lane or track, and, still better, if a second mark point can be included on the ley.

To prove, as well as illustrate, a ley by photography, at least three points must be shown in alignment. Such view-points are scarce, and take much finding. I climbed the bank with a heavy camera four times (incidentally breaking a bone in my foot on a wet slope) before I secured a lighted distance good enough for *Fig.* 57. This shows a mark ash tree, the great mound of New Radnor Castle, an avenue of ash trees, and the tower of Old Radnor Church (2½ miles away), on one ley.

I have twice succeeded in getting four good mark-points shown on one photograph. One is *Fig.* 58, Yazor to Gader, which I made four or five attempts at before getting the distance.

Trees often obscure such views, which may then come better in Winter. Winter, too, is almost the only season for getting successful views of earthworks, as the low sun-angle then shows them up by casting shadows. (See *Fig.* 25.)

AEROPLANE WORK.—An aeroplane is not only ideal for investigating leys from above, but also for taking air-photos. It will come in time.

FIELD WORK.—Experience and practice brings an insight, which quickly spots a ley. Often one can be first seen on the map, but I more often see it out of doors in "the ley of the land" itself, and this before the mark-points are found.

Footpaths count equally with roads in reading map indications.

G

Sighting staves are not only valuable in aligning along leys, but if left in the photograph (as in *Fig.* 45) enables a second view taken in the opposite direction to have its alignment proved in the photograph. This one aligns to a mountain notch.

IRELAND.—There is room for investigation here. It is certain that some alignment system was practiced, but whether for the purpose of tracks I do not know. Two correspondents häve told me, that standing on the central cairn in Giant's Ring (a hill-top vallum enclosed circle near Belfast), the peaks of several hills and, as I understood, cairns, aligned through the gaps. And Admiral Somerville found in several instances that the seasonal alignments (especially those for Bealltaine, May 6th) from stone circles were directed to an outlying stone, or a hill-top, or a cairn. But evidence of aligned tracks seems yet to find.

ROMAN ALIGNMENTS.—More investigation is wanted to solve the puzzle how much of the Roman track-system was on original alignments made by them, and how much simply their superior surface planted on older alignments. I do not know, except that the so-called Roman roads seem to blend with fragments of tracks sighted over much earlier mark-points.

"*Antiquity*," for October, 1927, points to there being a fair number of burial barrows of Roman date. The Romans did use sighting mounds. Who will identify them ?

SIDE ISSUES.—Ley investigation throws light on many different subjects which rightly tempts workers into fascinating special researches. Of these are two which I find dangerous to follow, if one's chief aim is to convince others of the reality of the sighted track.

EARLY RELIGION is the first of these, the gain to knowledge may be considerable, but most people do not want new knowledge in this, only confirmation of their existing idea or attitude, and are at once prejudiced.

PLACE NAMES form the second branch. The sighted track gives new information and sets a new point of view. I have not felt able to keep clear of this branch, for I find it part of the evidence in ley hunting. But for one whom it helps to know the ley system there are several who draw within their shell when the subject is mooted, for when once we have said in public that a certain name has a certain derivation, it is like drawing a tooth to acknowledge some other derivation.

OTHER BRANCHES.—There are many which will interest. The mystery of the union of way-mark and burial-place in one mound? The part played by beacons in marking out the track? Seasonal alignments at sunrise or sunset angles? To what races the ley-makers belonged? Whether straight-sighted tracks are still in use in any country? In what countries are the mark-points to be found as in Britain? From whom did the Romans learn their alignment practices? Why such plain references to straight tracks and mark-points in the Old Testament, and why in decay at that time?

LAKE ISLANDS.—I find that leys came through many of these. Some-one lived in them. Who will be the first to investigate a subject quite neglected in Britain? Here is new information which should bring out punt and spade when ponds are at low summer level. There are underwater causeways to be uncovered. I have seen signs of such in many dry moats round mounds.

ROADS THROUGH PONDS.—Enquire of all the farmers.

SALT TRACKS.—See if you can trace a line of "salt," "wick," "wych," "wich," "week," "white," "whit," or "wit," names aligning to a probable spot of salt production.

HILL NAMES.—Note if these are on or at hills. If not, do they line up with another "hill" name to a hilltop which is a sighting point. Here lies a means of proving that place-names often describe the track passing through them and not their own characteristics. So also with "black," "red" and "elm" names (the native or Wych

Elm is the origin), as three or more of each can sometimes be found on a ley.

Camp Alignments.—I find that in many cases three or more groups align between a pair of leys in the manner I describe.

Cup-Mark Alignment.—Many years ago, Dr. Graves, Bishop of Limerick, called attention to the striking alignments in groups of the pre-historic cup-marks on stones. He hazarded the opinion that they were maps or diagrams of the mounds in the district. Correspondents have sent me two original photographs of simple (not ringed) cup-markings on stones near them (see *Fig.* 20), and they both abundantly align into groups of three. I think the Bishop to be right.

Varied Name Elements.—Many remain for investigation to see if they align. Such as "Brown," which might mean on the peat-track, and we have "Maund" places, which name is Welsh for peat. "Gold" names, perhaps on sun-alignment tracks; "Pad" tracks, to see if they are narrower than "Broad" ways. Are the "Shining," "Sheen," and "Shin" names (Derbyshire) on the beacon track? "Corn" names, especially Cornhill, what do they mean? "Sick," in Derbyshire, and are the "Blues" on the woad-track?

CHAPTER VII.

BOOKS WHICH HAVE HELPED.

I have not yet opened a book, however poor, from which I was not able to glean something I did not know.

But for ley-hunting some have helped me enormously more than others. I do not attempt to give here a list of the best books, as probably I have missed reading many of them. I have not found the "standard" ones written by experts to be the most useful, but a small class written by amateurs who had developed a peculiar flare of inspiration on their out-door subject. Next to these, come the matter-of-fact records of patient investigation by digging, and after these a few outline books on one branch, compiled but good. Then travel-books can be searched for stray items. Lastly, the made-to-order compiled books, fair in their way, but all lifeless, having to adopt the orthodox statements, which are often wrong. Some of these are very poor, and some of the worst the greatly pretending books on one special track or road. Publisher's name (unless out of print) is in parentheses.

Here is my list ; many are out of print :—

"Green Roads of England." *Hippisley Cox.* (Methuen.)
"Neolithic Cattle-ways." *Hubbard.*
"Byways of Archæology." *Johnson.* (Cambridge University.)
"Folk Memory." *Johnson.* (Cambridge University.)
"Neolithic Man in North-East Surrey." *Johnson and Wright.*
"Forty Years in a Moorland Parish." *Atkinson.* (Macmillan.)
"Field Archæology of Hampshire." *Williams-Freeman.* (Macmillan.)
"Primitive Folk-Moots." *Gomme.* (Methuen.)
"Folklore as an Historical Science." *Gomme.* (Methuen.) All Gomme's books are good.
"Ten Years' Digging." *Bateman.* (Geo. Allen.)
"Forty Years' Grave Digging." *Mortimer.*

"Grave Mounds." *Jewitt.*
"Pitt-River's Excavations." About seven expensive volumes. (Private.)
"Everyday Life Series." By *Marjorie and C. H. B. Quennell.* (Dent.) Popular Outlines.
"British Museum Guides to Stone, Bronze, and Iron Ages."
"British Archaic Sculpturings." *Simpson.* For cup-markings.
"Prehistoric Scotland." *Munro.* (Blackwood.)
"Lake Dwellings of Ireland." *Wood-Martin.*
"Lake Dwellings of Scotland." *Munro.*
"Andover District." *Crawford.* (Oxford University Press.) 1922.
"Prehistoric Antiquities." *Clarke.* (Homeland Association.) 3/6. First-rate for flints.
"Stonehenge." *Norman Lockyer.* (Macmillan.)
"Church Stretton." Vol. 3. *Cobbold.* (Wilding, Salop.) 3/–. For Mounds on Longmynds.
"Year Book, Every Day Book, and Ancient Mysteries." *Hone.* Many quaint customs.
"Heywood Sumner's New Forest." (Brown & Son, Ringwood.) 1/6.
"Downland Pathways." *Allcroft.* (Combridges, Hove.) About 2/–.
"Ancient Mark-Stones of East Anglia." *Dutt.* (Flood & Co., Lowestoft.) 2/–.
"Legend Land." 6d. booklets. (G.W.R.)
"Pagan Stones of Caledonia." *Wise.*
"Our Forerunners." *Burkitt.* (Home University Series.) For cave drawings.
"Primitive Man, Religion, and Ethnology." (In the Temple Primers. Dent.)
"Rough Stone Monuments." *Peet.* (Harrup.) Strong on Continental examples.
"Life in Ancient Britain." *Ault.* (Longmans.) An all-round sketch.
"The Golden Bough." *Frazer.* (Macmillan.) A storehouse of folk-lore information, but has not helped me so much as lesser books.

"Flints." *Reginald A. Smith.* 7d., from Sec., British Museum. Their characteristics.

"Flying for Air-Survey Photography." *Tymms.* 2/-. H.M. Stationery Office.

I know that I have missed some good old standard books, such as *Evans's* "Stone Implements and Bronze Implements," *Greenwell's* "British Barrows." *Lubbock's* stolid books, etc. And I have also left out some older books, such as *Borlasse's* "Cornwall," and *Rowland's* "Mona," from which some neglected truths can be gleaned in spite of sneers from modern experts at these old observers. Good local guide books are not to be despised for fragments, but never trusted for deductions. The best information is to be found nowhere but in the "Transactions" of some local Archæological Society. But it takes a lot of sifting.

There is another method of information which is little in the public eye, but has grown to considerable importance, the postal contributory club.

Some forty-five years ago I joined one of the first, relating to photography, called the English Mechanic Postal Photographic Club, as readers of that paper started it. It died, but there came a successor, and for many years I have belonged to an Architectural Detail Photographic Club, which has done really important work, and contributed to the success of several books on that subject. Perhaps the literary clubs of this type are most numerous, where members contribute their poems (or tales, or plays, as the case may be), and they are circulated, written, or typed by preference, amongst members. Such circulation is usually quarterly, and each member sends on (by post usually) to the next member within a limit varying from 5 days to a week. It is found by experience that the number of members has to be strictly limited to about 30, otherwise the time taken to circulate becomes too long. In all cases, criticism by members is a feature.

A strictly private club of the above type regarding trackways has already been formed.

Is there not room also for local Ley-Ramblers' Clubs for taking actual exploring excursions? A member who knows a ley in the district visited to be leader.

It is not out of place to give here the full list of books published on ley matters, with their publishers and price, also cost of postage when inconvenient to order through a bookseller, which is the usual plan. Any, except Mr. Dutt's book, can be had by post from the Watkins Meter Co., Hereford, who publish some of them. I add the names of other books I have written, also to be had in the same way. But please do not send orders to me.

" Early British Trackways." (4/6, post 3d.) Simpkin Marshall. 1922.

" The Old Straight Track." (18/–, post 6d.) Methuen. 1925.

" The Ley Hunter's Manual." (2/–, post 3d.) Simpkin Marshall. 1927.

" Ancient Mark-Stones of East Anglia," By *W. A. Dutt*. Post free from Flood & Co., Lowestoft, for 2/2. 1926.

" The Watkins' Manual of Photography." (1/3, post 3d.) 10th edition. Simpkin Marshall. 1924.

" Photography, its Principles and Applications." (12/6, post 6d.). Constable. 3rd edition. 1927.

" Must we Trade in Tenths." (3d., post free.) Watkins Meter Co. 1919.

I should say that the first mentioned (of which few copies are left), although an early outline, is still desirable, as great pains were taken in its artistic get-up. It has a two colour sub-title, and no less than 13 of the finely reproduced illustrations are not repeated in the subsequent books. It has an incidental interest to some, in that it was bound by a man (Buckridge) afterwards convicted of the murder of his wife and her foster-mother.

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CONTRACTIONS.

Ch. = Church. Cl. = Castle. Cp. = Camp. Cs. = Cross. Fm. = Farm. Hl. = Hill Hs. = House or Homestead. Md. = Mound. Mt. = Moat. Ns. = Names. Sn. = Stone. St. = Street. Tks. = Tracks.

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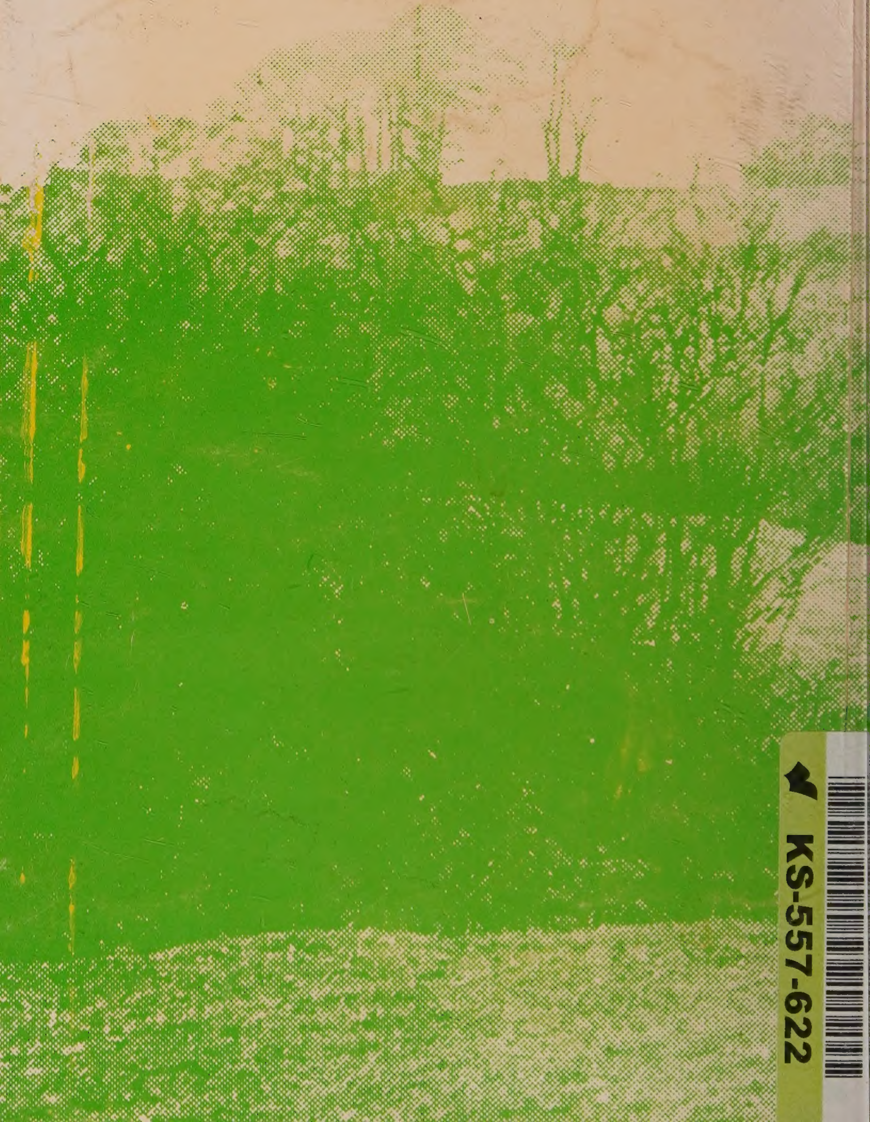
The sacred places and settlements throughout the country are founded on an esoteric pattern of 'leys' or accurately aligned monuments, stretching far across the landscape and laid down by the astronomer-priests of prehistoric Britain. The existence of an advanced stone age science was first recognized by Sir Norman Lockyer at the beginning of this century. Alfred Watkins's Manual shows the nature and extent of its relics and how to discover them. First published fifty years ago, it is still the definitive guide to practical field-work on the Mystery of Britain.



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